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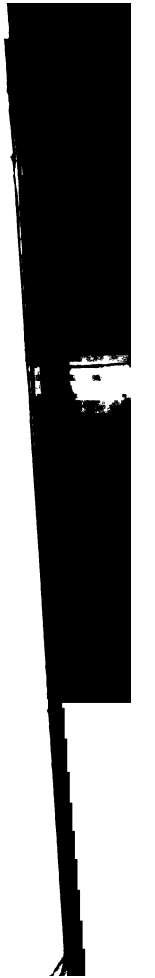
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STUDIES IN THE HISTORY OF IDEAS





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PREFATORY NOTE

THE present volume of studies in the history of philosophy expresses the desire of those who are or have been identified with work in philosophy at Columbia to encourage research and the exercise of historical imagination, and to contribute something to the work being done in this department of human interest. The title of the volume represents, however, a larger field of inquiry than the matter here included would indicate, a field in which others than philosophers are engaged and in which it appears that ideas have a history and that their history is influenced by contact with lines of experience not commonly called philosophical. The contributors have a sense of their obligation to co-workers in other branches, and wish to encourage and invite their collaboration.

The volume, it is hoped, will be accepted as expressing the wish to cooperate with similar enterprises elsewhere in the endeavor to increase America's contribution to the history of culture.

THE EDITORS



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APPEARANCE AND REALITY IN GREEK PHILOSOPHY

Back of philosophical systems lie ultimate intellectual and emotional interests. Such interests are partly individual and partly collective and social. Ultimate individual interests are expressive of personality and temperament; they are much the same from age to age. Thus Professor James's distinction between the tough-minded and the tender-minded is as applicable to Heraclitus and Parmenides as to Hume and Wolff. Social and collective interests, on the other hand, are expressive of the dominant concerns of an age, and, unlike temperamental differences, vary greatly from time to time. The idealism of Berkeley, for example, is in part a personal reaction consonant with a deep religious interest, and in part a refutation of scientific materialism which was an expression of the mechanistic interest of the age succeeding the foundation of Newtonian physics.

Thus one must approach the philosophy of an age in terms of its dominant intellectual and emotional interests. Philosophical differences are largely describable in terms of different temperamental natures reacting to varying social conditions. In this respect modern philosophy bears an interesting contrast to ancient philosophy. Modern philosophy, one is frequently told, is largely epistemological, whereas Greek philosophy is largely cosmological. This distinction between the ancients and the moderns might be clearly illustrated by reference to the idealism of Berkeley and to that of Plato. The method of approach in the two cases, the conceptual scheme in terms of which each system is worked out, the dominant interests lying back of each system are so entirely different that any attempt to pass from the one to the other as types of idealism would

involve the logical fallacy of accident. Modern philosophy is interested in the problem of knowledge. The approach to this problem is in terms of an interesting contrast, a contrast quite unknown in ancient times. It is the contrast between consciousness and its object, a distinction variously expressed in the form of a contrast between the knower and the known, the subjective and the objective, mind and matter, man and nature. This contrast is not made in Greek philosophy. The view of the mind as something outside of nature and in contrast to it is entirely unknown. With the Greeks there is a blending of naturalism and humanism. Their problems are set in terms of an entirely different contrast. It is the contrast, not between man and nature as in the modern period, nor between the natural and the supernatural as in the medieval period, but a contrast marking a distinction within the natural order itself. [1] It is the contrast between appearance and reality, between the world of sense experience and the world discovered by thought.

The word "reality", it should be noted, is a euphemistic term. Why should we call the sense world, appearance, and the world discovered by thought, reality? In answer to this question we may point out the empirical fact that things get differentiated into those which are important and those which are unimportant, into those which are interesting and those which are uninteresting. Such distinctions are symptomatic of interest and expressive of temperament. Now the distinction between appearance and reality is just one of these impressive and significant human distinctions. One, because of an ultimate temperamental constitution, becomes interested in one aspect of

[1] For the contrast between man and nature in the modern period, and between God and nature in the medieval period, I am indebted to Professor Woodbridge. He would also make a contrast in Greek philosophy between nature and art. While admitting the application of this distinction to Aristotle, I should maintain for Greek philosophy, as a whole, a wider contrast between reality and appearance.

existence to the exclusion of another. The object of his interest he calls reality; other things which are of secondary concern are relegated to the domain of appearance. That is to say, reality, in response to interest and temperament, is so *pre*-conceived that it applies to one aspect of the world and not to another. Ultimate metaphysical differences are, I think, temperamental. Many things are said to be logically inconceivable when as a matter of fact they are temperamentally intolerable. "The history of philosophy," says Professor James, "is to a great extent that of a certain clash of human temperaments."[2]

Turning to Greek philosophy, the specific theme of this paper, we find three well-defined types of interest which may be termed the scientific, the mystical, and the humanistic. It is my purpose to show that in response to each of these interests a distinction is made between appearance and reality, and to illustrate the form it takes in each case.

With Heraclitus, it should be noted, the distinction between appearance and reality is not made. For him the world of sense experience, just as it comes, is the immediate, empirical fact. One thing is just as *real* as another. So long as one just describes the flow of sense experience, so long as one is immersed in the stream and struggle of things, nothing ulterior is noted. The experience comes as a whole. On the emotional level it *is* what it is experienced *as*. The immediate does not admit of distinctions. To introduce distinctions is to depart from the given. Discrimination involves evaluation, emphasis, analysis.

I. THE SCIENTIFIC INTEREST

The aim of science is to explain. Scientific explanation is in the direction of simplification. Analysis thus becomes characteristic of scientific method and procedure. A thing is said to be explained when we have pushed analysis as

[2] *Pragmatism*, p. 6.

far back as it is possible to go. Thus arises the distinction between the ultimate and the derived, the primary and the secondary, elements and compounds. In terms of this distinction the scientist is ready to identify reality with the ultimate. Reality is *for him* the not further analyzable: it is the limit, whether elements, atoms, electrons, or what not, beyond which analysis can not go.

The greatest of the Milesians was *Anaximander*, the greatest because of the abstract thinking involved in the formulation of the conception of *physis* as something separate and distinct from any one of the elements. In this conception there is a foreshadowing of transcendentalism, perhaps the earliest recognition of a reality beyond the world of tangible and visible things. "And into that from which things take their rise they pass away once more." We have here a contrast between things as they now are and things as they were in a previous state and as they will be eventually. Something beyond the immediate world of sense is noted and it is from that which is beyond that the world of sense is derived and in terms of which it is explained. Whatever *physis* may be, it is something which is "eternal and ageless," it is something in contrast to the world of sense, more fundamental than and chronologically prior to it, and furthermore bears to the world of sense an *explanatory* relation. It is in this respect that Anaximander is representative of the scientific tradition in its earliest formulation. Early scientific analysis reveals a contrast between the ultimate and the derived, between a reality beyond and the world of sense.

Further advance in the direction of scientific interpretation is made by *Empedocles*[3] and *Anaxagoras*. Anaximander had derived the world of sense by a process of "separating out of opposites" which were somehow suspended as in a

[3] Empedocles belongs in part to the mystical tradition. *Cf.* the treatise on *Purifications* which is largely orphic.

menstrum. Empedocles and Anaxagoras describe more accurately the *means* of derivation, and in so doing formulate a mechanical type of explanation. "There is no coming into being of aught that perishes, nor any end for it in baneful death; but only mingling and change of what has been mingled" (Empedocles). "For nothing comes into being or passes away, but there is mingling and separation of things that are" (Anaxagoras). Both of these mechanists emphasize the composite structure of the world of sense and contrast it with an existence more elemental. The distinction is clearly made between the ultimate and the derived, between "roots" (Empedocles) and compounds, between "seeds" (Anaxagoras) and mixture. Of chief concern is the scientific interest in analysis and explanation, and the identification of reality with the (for them) ultimate and not further analyzable.

The scientific tradition culminates in the atomism of *Democritus*. In both temperament and interest Democritus is a scientist. His materialism represents a thoroughgoing mechanical and scientific analysis of *physis*. The indefinite "boundless" of Anaximander is reduced to a pluralism of material atoms geometrically and spatially arranged and obeying a mechanical type of activity. For the vague contrast between the "boundless" as the ultimate and the sense world as the derived, we have the clear-cut conception of a world of science and a world of sense, of atoms with quantitative differences, and compounds with qualitative determinations, of primary qualities and secondary qualities. Atoms are real, compounds are appearance. Atoms are real because, for physical science, reality is the not further analyzable; compounds are appearance because on the scale of analysis they are secondary and derived. The recognition of the fact that qualitative distinctions are not ultimate metaphysical predicates can have no meaning except in terms of some preconception of the meaning of reality.

Both Democritus and Plato hold that secondary qualities are appearance, but from very different reasons. For Democritus the distinction between primary and secondary qualities is made on the basis of the scientific interest in simplification. Logically the ultimate should be the bearer of as few descriptive predicates as possible. For Plato secondary qualities are not real because they do not measure up to certain esthetic requirements. Thus we see the form the appearance-reality contrast takes in the atomism of Democritus. The contrast, however, is not absolute; it does not indicate two separate types of existence. We do not have two worlds. There is only one order of existence within which one aspect is *for science* more fundamental, and becomes, therefore, the object of scientific interest. Reality is the world of science in terms of which the world of sense is *explained*. The qualitative world of sense, as well as the psychical realm of thoughts and feelings, is, by scientific analysis, reduced to atoms.

II. THE MYSTICAL INTEREST

It should be obvious that the purpose of this essay is not to give an exhaustive account of Greek philosophy, but merely by way of illustration to indicate certain dominant intellectual and emotional interests and to note the typical philosophical movements consonant with those interests. I shall now give four illustrations of the form which the appearance-reality contrast takes in the development of the mystical tradition. I am not concerned with the historical origin of mysticism. Suffice it to say that at all times there are to be found those whose dominant interest centers around the idea of escape from the world of sense. Wherever this interest appears some form of mysticism prevails. The external form which the mystical interest takes may be a matter of historical connection, but not the more deep-seated, and I dare say ultimate, emotional temper. Just such

a mystical interest is to be found in the orphic movement in early Greek history.

Orphism is the chief expression of a religious revival which occurred in Greece in the sixth century B.C. It is not Attic, but Thracian in origin. Olympian religion did not readily lend itself to mystical adaptation. Homer is literature, Hesiod is statistics, but neither is religion. The essence of religion consists in an inner spiritual attitude toward the gods. This side of the religious life of the Greeks is connected with the worship of Dionysius. The Dionysiac tradition involves a sin-atonement-salvation scheme. While the religious myth may have disappeared, the representational scheme of propitiation and salvation persisted. In orphism it takes somewhat the following form. On the one side there is the daylight world of familiar things; on the other side there is the world of darkness, the realm of taboo, the occult, the uncanny. This idea, that there are operating in the world occult forces and powers from the mysterious control of which man must somehow be freed, is deep-seated in human nature. It gives rise to a contrast between two realms, the realm of darkness and the daylight world. Furthermore, the two worlds are in conflict, the one threatens and imperils the security of the other. Man's attitude toward the realm of the occult is one of fear mingled with worship. The function of religion is to overcome this hostility; it is to free man from the overshadowing powers of darkness. Such concepts as release, escape, salvation are of importance. We have the recognition of two realms and the effort is made to make them consistent. Ceremony, initiation, ritual, abstinence, propitiation are but mythical and mystical means of escape.

Pythagoreanism is orphism reformed.[4] The contrast between the realms of the occult and the familiar is still

[4] Here I follow the interpretation of Pythagoreanism given by Burnet in *From Thales to Plato*, and by Cornford in *From Religion to Philosophy*. A similar interpretation was given by Professor Woodbridge previous to the appearance of either of these books.

preserved; what we have is a more refined and exalted conception of the means of escape. For the gross orgiastic reveries we have the substitution of music and mathematics. The Pythagoreans were closely allied to the medical schools of southern Italy. One way of treating certain types of hysteria was to have the patient listen to music. Mathematics was primarily a study intended to purify and uplift the soul. The later development of Pythagoreanism shows the tendency to leave out more and more of the orphic element, the ceremonies and the abstinences, and to encourage an independent spirit of scientific inquiry.

I mention *Parmenides* in connection with the mystical tradition because I think he is largely mystical in temperament and interest. With the mystical temperament there is usually associated a transcendental and absolutist interest.[5] The absolutist has generally, too, a genius for dialectic, as is seen, for example, in the case of Mr. F. H. Bradley. All of these interests are to be found in Parmenides. Wherever we find such temperaments we usually find reality defined as absence of contradiction, consistency, coherency, conformity to logical requirements. Now, equipped with such a preconception of the meaning of reality, the distinction is made between the consistent and the contradictory. If one have a genius for dialectic the logically puzzling is appearance, the logically coherent is reality. Reality is so preconceived that such concepts as space, time, motion have no meaning when applied to it. This is just the procedure of Parmenides. While his method is dialectic, it is not dialectic for the sake of dialectic. Primarily he is a mystic and his interest is in a world "far from the pathway of mortals." Consequently we have, on the one hand, this world, the Way of Opinion, the logically puzzling, a world of no spiritual value. On the other hand we have the other world, the Way of Truth, the logically

[5] *Cf.* the article, "Alchemy and the Absolute," *Mind*, Jan., 1913.

consistent, a world of great spiritual value. It is the well-marked contrast between appearance and reality, a contrast made in response to a temperamental interest and for the purpose of moral and spiritual uplift.

The mystical tradition culminates with *Plato*. The doctrine of "Forms" as expounded in the *Phaedo* and the figure of the cave in the *Republic* are both mystical and orphic. The *Phaedo* is Pythagorean. It is dedicated to Echecrates. The two chief interlocutors, Cebes and Simmias, are Theban disciples of Philolaus. "Philosophy," says Socrates in the early part of the dialogue, "is the noblest and best of music." This at once connects the discussion with the Pythagoreans. It is in the *Phaedo* that we have the dualism of body and soul pushed to an extreme form. Here if anywhere Plato is an ascetic. This may be due in part to the fact that the theme of the *Phaedo* is the immortality of the soul, and it would be natural with such a theme to find subordinate consideration given to the body. "For the body is a source of endless trouble to us by reason of the mere requirement of food; and also is liable to diseases which overtake and impede us in the search after truth: and by filling us so full of loves, and lusts, and fears, and fancies, and idols, and every sort of folly, prevents our ever having, as people say, so much as a thought. For whence come wars, and fightings, and factions? Whence but from the body and the lusts of the body?" Both here and in the figure of the cave in the *Republic* the soul is represented as a prisoner chained and confined to the body. The question is: How is the mind to be released from the body? How is escape from the prison to be effected? It is here that the orphic and Pythagorean element of Plato asserts itself. The release of the soul from the chains of the body is effected through purification. Says Socrates: "And what is purification but the separation of the soul from the body. . . But in the true exchange there is a purging away of all these things, and temperance, and

justice, and courage, and wisdom herself, are a purgation of them. And I conceive that the founders of the mysteries had a real meaning and were not mere triflers when they intimated in a figure long ago that he who passed unsanctified and uninitiated into the world below will live in a slough, but that he who arrives there after initiation and purification will dwell with the gods. For 'many', as they say in the mysteries, 'are the thyrsus-bearers, but few are the mystics'—meaning, as I interpret the words, the true philosophers."

Plato is essentially a moral philosopher. Purity and perfection are for him concepts of controlling value and importance. It is an ancient Greek idea that existence is moral. And perfection, according to Plato, is not to be found in the changing world of sense. The perfect can not change, for either it must change for better or for worse; if it change for better, it was not perfect to begin with, and if it change for worse, it degenerates and is no longer perfect. But for mysticism the more important concept is that of purity. Purity is the resultant of a process of purification; it implies escape from the senses, release from the body, which in itself is defiled, gross, and sordid. Thus it comes about that a contrast arises between perfection and imperfection, between purity and impurity, a contrast which leads to the formulation of the doctrine of "Forms."

This doctrine may be presented from two points of view. First, as to *mathematical* "forms." There are, on the one hand, such concepts as circularity and equality, perfect and unchanging patterns or models. There is, on the other hand, the more or less circular, the more or less equal, sense approximations, imperfect and changing. Circularity is one, circles are many. While the subject-matter of mathematical "forms" is scientific, the method of treatment is mystical. In the pure "form" there is no admixture of sense material. Thus we speak of a substance as chemically pure,

meaning thereby that it has gone through a process of refinement. In sugar refining, for example, there is boiling down to get rid of impurities; what is left over after the process is the essence, the pure form. In the same way we might compare the meaning of pure as applied to *pure* mathematics or as applied to *pure* motion, the idea in each case being complete riddance of sense material. Thus mathematical "forms" are both perfect and pure, and denote a type of existence universal and unchanging in its nature and completely separated from the imperfect and impure world of sense approximations.

Consideration is given, in the second place, to *moral* and *esthetic* "forms." After the analogy of circularity and the more or less circular, we have honesty and beauty contrasted with the more or less honest and the more or less beautiful. Perfection and imperfection, pattern and copies, purity and impurity, spirit and flesh represent the scheme of contrasts. "Forms" are real; consequently, purification becomes a method of attaining reality. Reality is appearance purged of its dross. It is the mind purified and refined, it is the spirit released from the body, it is pure form freed from imperfect sense approximations. By the extension of the concept of "form" to include moral and esthetic existence, Plato in the *Phaedo* marks an advance over the position of the Pythagoreans. As they had substituted mathematics as a more exalted means of purification for the ceremonies and initiations of orphism, so Plato gives a still more refined and intellectualized method of escape from the body chained to its prison of flesh. But even for Plato it is mysticism still, but mysticism without its magic.

The contrast between the perfect and the imperfect, the pure and the impure, "forms" and sense approximations, is also the contrast between reality and appearance. Now why should I designate the one realm, reality, and the other, appearance? Obviously for no other reason than that, in

response to a moral and mystical interest, I have so preconceived the meaning of reality that it applies to the one realm and not to the other. The mystic's primary concern is with perfection and purity. Neither of these ideals can be realized in the shifting world of sense. The senses contribute nothing to my *preferred* reality; even more they are a positive hindrance, they hold the spirit back, and thus assume the nature of evil. The world of "forms," from the standpoint of mysticism, represents an ideally constructed world where the ideals of purity and perfection are realized. But such a world of reality rests upon a definition, and the definition is weighted with an overload of mystical feeling. Once equate reality with perfection, then assume that the perfect exists, and it follows that *such* a reality is not to be found in the changing world of sense.

III. THE HUMANISTIC TRADITION

In the humanistic development I shall select illustrations from the sophists and from Plato. I do not doubt that there was a humanistic movement prior to the age of the sophists. Xenophanes was most certainly a humanist. So, too, the age of the Seven Wise Men was an age of practical wisdom. Thales was an economist and a statesman.

Greek science both culminates and terminates with Democritus. It is Plato and Aristotle, not Democritus, who dominate the intellectual history of western Europe for some eighteen or twenty centuries. Democritus must needs await the age of Galileo and Newton before he comes into his own. One naturally seeks a cause for the decline of Greek science. Professor Burnet attributes it to the growing skepticism of the Eleatics. This was doubtless a very important factor. To this we would add an additional consideration. The Greek mind was prevailingly theoretical rather than practical. That is to say, in the language of Professor Woodbridge, the Greek was primarily interested in the exercise

of the intelligence for its own sake, and not for practical purposes. In response to this interest science was developed on its theoretical and logical side. Science at the hands of Democritus had gone about as far as it could go in the direction of theory. To use science in the interest of control or for the purpose of practical utility was foreign to the Greek view of the function of thought. To make an experimental investigation of nature and to use the results of this investigation for the betterment of mankind was un-Greek. Thus Bacon, with characteristic disdain for the purely theoretical achievements of the ancients, writes: "Now, from the systems of the Greeks and their subordinate divisions in particular branches of the sciences during so long a period, scarcely one single experiment can be culled that has a tendency to elevate or assist mankind, and can be fairly set down to the speculations and doctrines of their philosophy." [6] Modern science differs from Greek science in that the former investigates nature for the purpose of control, utility, and progress. To theoretical interest it adds experiment, instruments, and mechanical technique. Man must "reign" in "the kingdom of nature." Thus, by making science practical, nature and conduct are closely related. But this, partly due to the subordination of practical to theoretical interest and partly due to the lack of mechanical instruments, Greek science did not do.

According to Democritus the world of science, the atomic world of reality, was beyond the world of sense. Solid, rigid and unchanging, it was far removed from the world of practical affairs and could have but little value, other than that of scientific explanation, for human conduct. Thus among the Greeks the man of practical interests, who seeks a field of influence and control in human affairs must needs turn to the world of sense. The humanistic movement is primarily a reaction to Greek science and denotes an interest

[6] *Novum Organum*, Book I, Aphorism LXXIII.

in what lends itself to interference and control. The world of sense is the domain of human concern because it is modifiable and controllable. Nature, or the world of science, as absolute, solid, and unmodifiable, is contrasted with human institutions, conventions, laws, customs, and conduct. In the humanistic tradition the contrast between appearance and reality takes the form of a contrast between nature and convention. In the scientific tradition the tendency was to keep the two realms together, together, that is, so far as scientific explanation goes. The world of science is the ultimate in terms of which the world of sense is explained. There is an all-inclusiveness about atoms which entitles them to the name of reality. In the mystical tradition there was a tendency to exalt "forms" and to decry the world of sense. In the humanistic tradition, at least in its earlier formulation among the sophists, the tendency is to exalt convention and to lose interest in nature. Later the claims of the two are recognized and adjusted by Plato.

I do not find any reason to believe that the portrait of *Protagoras* as given by Plato in the dialogue which bears his name is not a true and faithful picture. We know, too, that Plato often reveals his deepest meaning in the form of a myth. In the myth there put into the mouth of Protagoras one finds a differentia by means of which man is distinguished from the animals. Commenting on the passage Professor Burnet says: "Plato represents Protagoras as a convinced champion of Law against all attempts to return to nature for guidance. He was a strong believer in organized society, and he held that institutions and conventions were what raised men above the brutes."[7] The primary interest of the scientist, as we have seen, is in explanation, and on the basis of this principle the distinction is made between the ultimate and the derived. The primary interest of the humanist is in control, and on the basis of this

[7] Burnet, *Greek Philosophy*, p. 117.

principle things are distinguished as controllable and uncontrollable, as modifiable and unmodifiable. Nature is uncontrollable and, therefore, constitutes a field beyond the domain of human interest. Action and conduct are controllable and are for this reason objects of interest.

On the basis of this contrast of nature and convention the distinction is made between truth and expediency. What I immediately perceive through the senses is "true," that is to say, it is what it is. There is no appeal beyond the immediacy of sense perception. If I have jaundice, I see all things yellow. Just so far as the perception is concerned it is "true" that I see yellow. I can not change my perceptions. They are absolute and unmodifiable. On the level of immediate sense experience I can not "teach" myself to perceive in any other way than the way the senses act by "nature." And as no two people have exactly the same sense experience, so "truth" is an entirely individual matter. Argument and dispute are useless. I can not perceive differently from the way "nature" has made me. If you want me to see things differently you will have to make me differently.

But while, if I have jaundice, I see all things yellow, it does not follow that it would be expedient for me to *act* on the basis of this fact. Action and conduct have a determinate other than "truth," or what is the same thing, other than the immediate and unalterable "fact" of sense experience. Cues for action are taken, not from "truth," which is absolute and individual, but from expediency which is derived from a common share of acquired experiences. Over against the unalterable world of nature is the relative world of customs, institutions, and social sanctions. It is from this world of human creation that cues for conduct are taken. Laws, conventions, social distinctions are secondary and derivative, and are for that reason subject to change and amenable to control. And that is why vir-

tue, political wisdom, and social justice are things which can be "taught."

From Protagoras we turn to *Plato.* I shall briefly sketch Plato's political theory, as expounded in the *Republic*, and his theory of knowledge, both of which are humanistic considerations.

The humanistic tradition is set, as we have seen, in terms of a contrast between nature and convention. The sophists had exalted convention without reference to nature. But after all one must come back to fact. The world is not an altogether jelly-like structure entirely plastic to human construction. There is something alien to humanistic creation which operates as a check; there is a limit, call it "matter," "pure experience," "resistance," or what not, but something there is which mind is up against, something to be reckoned with. If we call this something *nature*, then to the Greeks nature was absolute, fixed, and unchanging, and thus lay beyond the domain of human control. The sophists, with their interest in the plastic, with their passion for influence in practical affairs, to a large extent ignored nature. That is to say, conventions were developing irrespective of natural control. The inevitable consequence of such a procedure is some form of opportunism, or an individualism independent of the constraint of nature.

The political philosophy of Plato represents an attempt to adjust nature and convention. The two, according to Plato, are out of harmony. The problem of the *Republic* is to adjust them; it is to make social and political distinctions conform to natural differences.

The teaching of Plato is that men are by nature different. Social distinctions are based on natural inequalities which in themselves are absolute and unalterable. Thus, at the end of the third book of the *Republic* Plato writes: "Citizens, we shall say to them in our tale, you are brothers, yet God has framed you differently. Some of you have the

power of command, and these he has composed of gold, wherefore also they have the greatest honor; others of silver, to be auxiliaries; others again who are to be husbandmen and craftsmen he has made of brass and iron." Institutions, on the other hand, are objects of secondary creation. Like the sophists, Plato regards society as of human origin. He traces with some detail the natural creation of the state. But the organization of society, the growth of political authority, the selection of rulers had not developed on a natural basis. A glance at the state of politics and society as they existed in the time of Plato reveals a situation of disorganization and conflict. Internal strife, political misrule, social disintegration threatened the stability and safety of Athenian life. It is in response to this situation that Plato presents a political theory. It is an attempt to smooth out the more serious conflicts in social and political life in the light of the unalterable principles of nature. Though man can not control nature, it does not follow that nature should not be a controlling factor in the affairs of men. Plato's problem as set forth in the *Republic* is, as we have seen, to adjust convention to nature, to make, as he says in his poetical language, "the ways of men agreeable to the ways of God." In the sixth book of the *Republic* Socrates is asked which of the existing forms of government is most suitable to philosophy. The reply is: "Not any one of them, I said; and that is the very accusation which I bring against them: not one of them is worthy of the philosophic nature and hence that nature is warped and alienated from them; as the exotic seed which is sown on a foreign land becomes denaturalized, and assimilates to the character of the soil, which gets the better, even so this growth of philosophy, instead of persisting, receives another character."

I am not concerned with Plato's particular solution of the problem. No one of his "three waves" of reform may satisfy us now. What is of importance is the penetrating

diagnosis which he makes of the conflicting social conditions, and the clear statement of the problem involved. And herein, I should like to say, consists the purpose of philosophy. It is, as Professor Dewey has pointed out, to locate the more serious conflicts in life and to bring intelligence to bear on the adjustment of these conflicts. This high purpose is nowhere better illustrated than in the *Republic* of Plato. And nowhere in Plato do we find such a synthesis of the appearance-reality contrast as we find in his political theory. Existence is withheld from neither of the contrasting factors, the claims of each are recognized, and a straightforward and serious attempt is made to adjust and to reconcile them.

Opportunism as a political theory, a theory with which sophism is all too closely affiliated, has as a counterpart in the realm of knowledge a doctrine of skepticism. At the hands of Gorgias skepticism was the equivalent of intellectual nihilism, a position in logic analogous to the political anarchy as championed by Thrasymachus in the *Republic*. What skepticism as a logical doctrine means is that knowledge has no objective and natural basis of validity. It was wholly subjective, subjective in the sense of being individual and conversant with particulars, not in the sense of intramental. The Greeks would not have understood what was meant by subjective in the sense of intra-mental. As in society convention had developed without respect for nature, with a resulting individualism, so in logic a doctrine of knowledge was built up independent of an objective basis of control. Leaving out of account all natural checks, knowledge could possess neither form nor stability. As a theory of knowledge sophism ended in an extreme individualism and skepticism, or what is the same thing, reality exists only in the form of particulars. On this assumption we might point out that Gorgias was perfectly right in maintaining the impossibility of knowledge. Tied to par-

ticulars I can never *know* anything. On such an assumption neither intelligence nor communication is possible.

As Plato combated the opportunism of the sophists in the domain of politics by reaffirming the checks and constraints of nature, so he combats their skepticism in logic by establishing a *natural* basis for the validity of knowledge. Here again we meet the doctrine of "forms." The purely logical approach is no longer mystical, having to do with purity and perfection, but is rational and is concerned with a basis of induction. "Forms" are the foundations for inference and generalization, and as such are the indispensable conditions of knowledge. "Forms" are nature *par excellence*, they are reality, they are *physis*. Reality in the form of particulars would be a world in which knowledge could never arise. The fact of intelligence demonstrates the existence of universals. "Intelligible forms" are the *a priori*, though purely objective, conditions of knowledge. Being indispensable for knowledge they are, therefore, real, and are set up in contrast to particulars which are for knowledge mere appearance. Reality is the logically fundamental. In Plato's theory of knowledge the contrast between appearance and reality is very marked. On the one side we have perception, the particular, counting, enumeration, becoming. On the other side we have thinking, the universal, definition, induction, being. The world of "forms" is absolute and unchanging; the world of sense is relative and fleeting.

We have already intimated that the humanistic movement is in part a reaction to science and have shown the form which the reaction took in the domain of practical affairs. Plato's theory of knowledge is also in part a reaction to science. This is clearly shown in the interesting passage in the *Phaedo* where Socrates gives the account of his early education. "When I was young, Cebes, I had a prodigious desire to know that department of philosophy which is called Natural Science; this appeared to me to have lofty

aims, as being the science which has to do with the causes of things, and which teaches why a thing is so, and is created and destroyed; . . ." A brief account of the position of science is given, followed by a statement of the grounds on which Socrates is made to oppose that position. Science, as we there learn, was entirely mechanical. Socrates objects on the ground that true explanation can not be had in terms of mechanism. Explanation involves "final" causes. Thus: "There is surely a strange confusion of causes and conditions in all this. It may be said, indeed, that without bones and muscles and the other parts of the body I can not execute my purposes. But to say that I do as I do because of them, and that this is the way in which mind acts, and not from the choice of the best, is a very careless and idle mode of speaking." Mind as a principle of explanation is distinguished from "elements" as teleology from mechanism. Plato's doctrine of knowledge is the logical counterpart to the atomism of Democritus. Science and mechanism lead to atoms; atoms are particulars. Logic and teleology lead to "forms," and "forms" are universals. Materialism and idealism are the two most widely divergent metaphysical theories. They denote different analyses in response to different interests. Neither as a theory is intelligible apart from those interests. The indefinite "boundless" of Anaximander, in response to a purely scientific interest, is analyzed into a pluralistic world of hard and rigid atoms, which in themselves constitute the subject-matter of science. In response to an entirely different interest on the part of Plato, the homogenous and undifferentiated being of Parmenides is ordered and organized into a world of intelligible 'forms." The discovery of "matter" with its mechanical mode of behavior is the achievement of science. The discovery of "form" as a basis for teleology and knowledge is the achievement of logic. Each does justice to one side of existence, but to one side only, and hence the contrast be-

tween reality as a scientific or logical selection and appearance as a realm outside the privileged domain.

We noted in the beginning that the distinction between appearance and reality did not emerge in the description of the immediate as given by Heraclitus. We should now note that for Aristotle appearance and reality do not denote a metaphysical distinction. Once, in response to a moral interest, as in the case of Plato, you identify reality with the unchanging, then you must contrast it with the changing. Aristotle, resembling Heraclitus in his free empirical approach, is more nearly free from initial preconceptions. To the Greek mind the most impressive fact of observation was the fact of change. This immediate fact has been noted and to some extent described by Heraclitus. Subsequent theories had attempted to explain change and to reconcile it with special interests. They had ended by identifying reality with the unchanging, whether the rigid world of atoms, or the unalterable world of "forms." Neither does justice to all of the facts; both represent prejudicial selection, a choice of values. For Aristotle, as for Heraclitus, not being but becoming is the significant fact for consideration. The most direct metaphysical question is: *What sort of being must being be when being becomes?* With such metaphysical concepts as potentiality, continuity, efficiency, chance, novelty, final causes, *etc.*, no contrast between appearance and reality emerges. Production is characteristic of all existence. So far as there is a contrast, it is, as Professor Woodbridge has said, a contrast between the productions of nature and the productions of art.

We may here briefly summarize the results of this paper. Back of philosophical systems as controlling factors in their formulation lie, as we have said, ultimate intellectual and emotional interests. Consonant with those interests typical philosophical theories have arisen. In Greek philosophy three well-defined interests are observable, the scientific, the

mystical, and the humanistic. In response to each of these interests certain distinctions are made, distinctions which have meaning and application only in terms of a specific basis of division.

Heraclitus, happily free from initial preconceptions, is concerned with a description of the immediate. On the emotional level one thing has just as much reality as another, consequently no distinctions are made. The fact of change is noted, but no attempt is made to explain it. Explanation is the aim of science. The fact of change constituted the subject-matter of the first scientific inquiry into the structure of the physical world. The first great achievement of science was the discovery of the composite structure of physical objects and the explanation of change as the combination and separation of component elements which themselves do not change. The dominant interest of science is explanation; its prevailing method is analysis. The pursuit of this interest and the application of this method lead ultimately to the discovery of matter, an existence beyond the sense world, atomic in structure and elemental in form. As the limit of scientific analysis Democritus sets up the atom as real, and presents the changing world of sense as unreal, unreal because it is capable of further decomposition into more elemental parts. Mysticism, likewise, withholds reality from the world of sense, but for a very different reason. The mystic cares little for scientific analysis, but is concerned much about moral and spiritual values. Purity of soul and moral perfection are matters of deep concern to him. If one is resolutely determined on the realization of an ideal, and that ideal can not be attained in this world, he creates another world where his ideal can be realized. Once equate reality with perfection, and then assume that perfection is static, it follows that *such* a reality is not to be found in the domain of sense experience. The initial identification of reality with perfection represents a choice of

values and is the result of a temperamental preference. Finally, humanism adopts as its dominant concern control in practical affairs. Some things are found to be controllable, some to be uncontrollable. Consequently, the sophists, typical representatives of humanism, seek a field where intervention and influence are possible. In education, in ethics, and in politics they leave nature out of account because nature is rigid and uncontrollable. When, for example, Protagoras maintains that virtue can be taught, what he intends, I dare say, is to locate virtue within the domain of the modifiable, and thus to establish the possibility of ethical development. But this modifying tendency must needs have some regulating and steadying power, otherwise anarchy and opportunism will prevail. It was the genius of Plato to point out that the plastic should be molded in accordance with the form of nature; and this as much in the theory of knowledge as in the domain of ethics and politics. Plato's "forms" are principles of regulation and control.

Thus we have a world of many "realities." There is a reality for immediate experience, a reality for science, a reality for moral and mystical uplift, a reality for logic, a reality, largely to be ignored to be sure, for the man of practical affairs. And they are by no means the same reality. In one case atoms are real, with materialism as a metaphysical theory; in another case "forms" are real, with idealism as a theory. Or, again, the world of sense which is of little value as an object of science is, as a field of practical influence, of the utmost importance.

Now what shall we say of the foregoing analysis? Is it possible to fix any single consistent meaning to the word "reality"? Which of the above realities is *really* real? Does the word reality denote just so many ways of looking at the world, just so many points of view, or is there an *absolute* reality? Or, what I think amounts to the same thing, is

the distinction between appearance and reality an ultimate metaphysical distinction? And if so what is the basis of such a distinction? In technical language, it is the issue between pluralism and monism.

A philosophical theory is an hypothesis devised to explain a group of facts, facts which just as they stand are incomplete and which require additional supplementation. In the foregoing analysis the group of facts in accordance with which divergent philosophical theories were formulated represented different subject-matters. They were not the same facts, and, more obviously, they were not *all* the facts. In each case the group of facts was a selection, a choice, a partial and not a complete inventory. The distinction between appearance and reality represents, as we have seen, an assorting of facts on the basis of a selected principle of division. There was nothing absolute about the choice of a principle; on the contrary it was quite arbitrary. Aroused by a passionate interest in one aspect of the world, or dominated by a controlling preference for a specified group of facts, one has come to make definite distinctions. Reality, accordingly, represents a choice of facts or a selection of values. But, one may ask, is it not possible to take a complete view of *all* of the facts? Is there not some one point of view from which one can survey the whole of existence? May one not have an enlarged interest in totality? And if so, may we not formulate a metaphysical theory which would be all-inclusive? For one-sided projections, partial and incomplete glimpses, may we not substitute an absolute point of view? An affirmative answer to these questions involves some form of monism or absolutism.

Of course in some sense the world is one. It may be just one mess, but even so it supports a single label of identification. But such a monism can hardly afford much satisfaction. Or again, if one have a passion for completeness,

he may view the world as one. But what is the evidence for completeness? It is certainly not evidence resting on an empirical discovery; but rather it is evidence derived from a moral interest. One feels that completeness is a *better* thing than incompleteness, and, in response to this moral feeling, so pictures the world *as if* it were complete. If I assume that reality is complete, then in accordance with this assumption, I must describe that kind of a world. Absolutism denotes what the world would be *if* it were complete. But surely this is not metaphysical absolutism; either it is methodological absolutism, or metaphysical vandalism. Reality in response to an esthetic preference is so mutilated that it is forced to fit moral demands. So it turns out that absolutism is just one of the ways of taking the world. It satisfies a passion for totality, but leaves entirely out of account an interest in details. It is an ideal construction in terms of a moral interest. The world of the absolute is not a world we discover; it is a world we create as an ideal projection of certain deep-seated interests.

There is a further objection to absolutism. The absolutistic thesis is that there is some one point of view from which all the facts of existence may be surveyed. Such a point of view is that of the All-Knower. The All-Knower is the one who, from the standpoint of the whole, sees everything all at once. The doctrine of the All-Knower involves, it seems to me, a paradox. It implies an assumption which, when formulated, renders the fact of knowledge impossible. The assumption is that reality is a closed system which operates according to mechanical laws. The conception of an infinite intelligence implies a mechanical theory of the world. Prediction of the future rests on the principle of causality. Novelty and chance are out of the question. Nothing really new can come into being. All that is going to happen is somehow already contained in the premises and can be logically deduced from them. And it is just as true

that a mechanical theory of the world implies the kind of a world in which intelligence can never arise. This was just Plato's objection to mechanical science. The crux of mechanism is causality and physical continuity. The central factor in inference is a "leap," a going beyond the given, a break in physical continuity. Contingency and transcendent implication are the marks of thought. The fact of thought demands teleology as a predicate of reality, and teleology implies contingency and chance. The very nature of thought is such that it precludes the possibility of a total view of reality. You can conceivably get a reality that is all-inclusive, but such a reality would not be the kind of reality where intelligence or knowing is a factor. The kind of a world where thinking is possible is the kind of a world where an absolutely complete act of thought is unattainable. Thus absolutism, as Schopenhauer says of materialism, "even at its birth has death in its heart." It stands self-refuted; its basal and necessary assumption is destructive of its existence. Consequently, we are forced to abandon monism and to declare in favor of pluralism.

What, then, is reality? The answer to this question will always depend on the demands we place on the selected group of facts. All evaluation represents a selection, and the selection is made with reference to some specific interest. *Reality is a choice of values.* That this is so has been abundantly illustrated by the brief sketch of the contrast between appearance and reality in the history of Greek philosophy.

M. T. McClure.

THE MEANING OF ΦΥΣΙΣ IN EARLY GREEK PHILOSOPHY

The early Greek philosophers are said to have nearly all written books Περὶ Φύσεως. We, unfortunately, have little but the titles to inform us as to what was their object of investigation, and the meaning of φύσις in this connection has been subject to doubt since the time of Plato. An interpretation which started with Plato comes to us finally in Burnet as follows:

So far as I know, no historian of Greek philosophy has clearly laid it down that the word which was used by the early cosmologists to express this idea of a permanent and primary substance was none other than φύσις; and that the title Περὶ φύσεως, so commonly given to philosophical works in the sixth and fifth centuries B. C., does not mean, 'on the Nature of Things',—a far later use of the word,—but simply, 'Concerning the Primary Substance'. Both Plato and Aristotle use the term in this sense when they are discussing the earlier philosophy, and the history of the word shows clearly enough what its earliest meaning must have been. In Greek philosophical language, φύσις always means that which is primary, fundamental, and persistent, as opposed to that which is secondary, derivative, and transient; what is 'given', as opposed to what is made or becomes. It is that which is there to begin with.[1]

In his more recent book Burnet explains,

Indeed, if we take a broad view of it, we shall see that it depends on the extension of the observed identity of ice, water, and steam to earth and stones on the one hand, and to air and fire on the other. In other words, it substitutes for the primitive 'four elements' something which bears a much closer resemblance to what are now called the three states of aggregation, the solid, the liquid, and the gaseous. At any rate, the Milesians believed that what appears in these three forms was one thing, and this, as I hold, they called φύσις. That meant originally the particular *stuff* of which a given thing is made, for instance, wooden things have one φύσις, rocks another, flesh and blood a third.[2]

[1] John Burnet, *Early Greek Philosophy*, 1892, p. 10.

[2] John Burnet, *Greek Philosophy*, 1914, p. 26 (my italics).

The first serious questioning of this view was undertaken in an address by Professor Woodbridge on "The Dominant Conception of the Earliest Greek Philosophy." [3] Professor Woodbridge examined the doctrines of those of the early Greeks of whom we have a certain fragmentary evidence, *i. e.*, Heraclitus, Parmenides, Empedocles, and Anaxagoras with an eye to the doctrines which they expressly *combated*.

When Heraclitus and Parmenides are compared with regard to the idea they seem to entertain of the dominant conception of their predecessors, they show a marked agreement. Diverse as their own positive speculations may be, they appear in opposition to the same current opinions. They stand opposed to a naturalistic philosophy which, basing all explanation on the phenomena of sense, sees these phenomena in a process of generation and destruction, of birth and death, and explains this process through the activity of some material element. According to Parmenides this activity is accounted for by the passion of love aroused by some divinity. Over against this current conception, they assert as truths new to the world, the one the guiding principle of an unseen harmony, veiled from the senses, but revealed to reason as an intelligent principle, the other the persistence of an indestructible reality whose absolute nature makes seeming birth and death a real impossibility for thought.

The later men, *i. e.*, Empedocles and Anaxagoras, according to Professor Woodbridge, profited from both the Ionians and their critics. With respect to the former the "change is from a physiological origin of things to an origin resulting from the mechanical union of natural elements, brought about by forces acting upon them, a change from elements possessed somehow with life and power to produce things, to lifeless elements mechanically mixed." With the Ionians "the process of nature was conceived, it appears, as a physiological process, a succession of births and deaths, of absolute beginnings and endings, mediated, it may be conjectured, by some natural principle." Περὶ Φύσεως,

[3] F. J. E. Woodbridge, *Philosophical Review*, Vol. X, 1901. Somewhat inspired by Professor Woodbridge's view are two articles by E. C. H. Peithmann in the *Archiv für Geschichte der Philosophie*, Vol. XV (VIII).

accordingly, would naturally mean *On Origin, On Birth, On Coming into Being, On Growth.* Φύσις "can mean only 'origin', and is a synonym of γένεσις," and Empedocles accordingly writes, ... φύσις οὐδενός ἐστιν ἁπάντων θνητῶν, ... (*Frag.* 8).

More recently, Professor J. L. Meyres[4] has expressed the opinion that in general φύσις signifies "the way things grow." "In phrases from the Ionian physicists, however," he says, "it seems always to be used intransitively and, also, to be used always in its strict verbal sense [*i. e.*, φύειν, to grow]."

The controversial article by Professor Lovejoy,[5] however, and Professor Burnet's reiterated explanation in his latest volume indicates that the question is not satisfactorily settled. As φύσις is considered to have been the most absorbing object of interest among the early Greek philosophers, it is a matter of prime importance, not only for the correct understanding of the Ionians, but of their immediate successors as well, to gain as clear a conception as possible of what they proposed to discuss when they wrote Περὶ Φύσεως.

In order to arrive at this understanding, I propose to examine certain pre-Platonic literary uses of the word and the discussions of its early philosophical use as given by Plato and Aristotle and then apply such conclusions as may be reached to the instances in the fragments themselves.

The word φύσις does not occur in Hesiod so far as I can find. Homer uses it once:[6]

[4] J. L. Meyres, "The Background of Greek Science," *University of California Chronicle*, Vol. XVI. This article is noted with approval by Gilbert Murray, *The Stoic Philosophy*, 1915, p. 37, Note.

[5] A. O. Lovejoy, "The Meaning of Φύσις in the Greek Physiologers." *Philosophical Review*, Vol. XVIII, 1909. *Cf.* W. A. Heidel, "Περὶ Φύσεως, a Study in the Conception of Nature among the Presocratics." *American Academy of Arts and Sciences, Proceedings*. Vol. XLV, 1910, p. 77.

[6] C. T. Damm, *Lexicon, etc., Homericae et Pindaricae*, London, 1842.

Speaking thus, Hermes offered me the medicinal plant (φάρμακον),
Pulling it out of the ground, and explained to me its φύσιν.
It had black roots and a milk-like flower.
The Gods call it Moly. To dig it up is very difficult
For mortal men, but the gods can do all things.
(*Odyss.*, X, l. 302 *et seq.*)

Pindar employs the word twice:[6]

One is the race of gods and men. For we both take our life from one mother. But very different powers distinguish them. The one is nothing, but the brazen, firm abode of heaven abides eternally. Yet in what do we resemble the immortals, either in mind (νόος) or φύσις. (*Nemian Odes*, VI, l. 9.)

Indeed he is no Orion (the hunter) in φύσις; On the contrary rather despicable to look at, but nevertheless staunch in a fight.
(*Isthmian Odes*, IV, l. 83.)

We next turn to a writer of the fifth century, Aristophanes, where examples are more numerous.[7]

Chorus of Clouds: Oh never-failing Clouds,
Come let us raise up into sight our dewy, bright φύσιν,
From Father Oceanus's resounding caves (*Clouds*, l. 276).

(Here φύσις almost equals "selves".)

The Clouds are spoken of as assuming various shapes when they see various *kinds* of people.

Strepsiades: For what, indeed, do they do, if they see Simon, the robber of the people?

Socrates: They display his φύσιν (nature, character) and immediately become wolves (in shape) (*Clouds*, l. 352).

Socrates (examining the man to see what he can do, how good his memory is, *etc.*):
Do you then naturally (ἐν τῇ φύσει) speak readily (*Clouds*, l. 486)?

(The Greek Scholia here reads: "Have you *readiness* in speaking?")

Strepsiades: If I am careful and learn readily,
Which of your pupils shall I come to resemble?
Socrates: You shall not differ from Chaerephon with respect to φύσει.
Strepsiades: Alas, how unfortunate! I shall become half dead (*Clouds*, l. 503)!

[6] C. T. Damm, *Lexicon, etc., Homericae et Pindaricae*, London, 1842.
[7] H. Dunbar, *Concordance to the Comedies and Fragments of Aristophanes*, Oxford, 1883.

Chorus of Clouds: Go rejoicing in this manly spirit! May good fortune attend the man who, though advanced in years, applies his φύσιν to the deeds of youth and cultivates wisdom (*Clouds*, l. 515).

Chorus of Clouds (speaking of Electra): Note that she is by nature (φύσει) self-restraining (*Clouds*, l. 537).

Father of Phidippides (speaking to Socrates of Phidippides): Don't pay attention to him! Teach him! He is naturally (φύσει) quick-witted (*Clouds*, l. 877).

(The Greek Scholia comments: "By αὐθυμόσοφος is meant a man whose wisdom is the result of his own ability and not of learning from others.")

The Clouds (addressing Justice, personified, and exhorting him to defend himself against injustice): But you who crowned our ancestors with many profitable customs
Give utterance to whatever you like and tell us what your φύσιν is (*i. e.*, what you are good for) (*Clouds*, l. 960).

Injustice (after speaking of the delights of living a loose life as over against self-control): But I turn to the necessities of your φύσεως (and shows Strepsiades how that he must have this power of sophistry in order to defend himself when taken to court for committing adultery, *et al.*).
But if you will be my companion, he adds, indulge your φύσιν, leap, laugh, think nothing shameful (*Clouds*, ls. 1075 and 1078).

. . . . . .

Phidippides: Solon of old time was by nature (φύσει) a lover of the people (*Clouds*, l. 1187).

Euelpides (speaking of Athens): Not hating the city herself,
As though she were not great and well-favored by φύσει (*Birds*, l. 37).

Euelpides (*to the Epops*): Because you were once a man. . . .
Then, exchanging your φύσιν for that of a bird,
You flew round the earth (*Birds*, l. 117).

(The English idiom would be: "Changing your*self* into a bird.")

Epops: Though with respect to their φύσιν they are enemies, they are come with friendly intention (*Birds*, l. 371).

Chorus: Come, Ye men, by φύσει living in obscurity, a leaf-like race,

. . . . . .

That, hearing from us correctly about the astral phenomena,
The φύσιν of the birds, the birth of the gods . . . . (*Birds*, ls. 689 and 691).

(Obviously nature.)

Posidon: . . . What are you doing? Are you going to put your coat on your left shoulder that way?
Are you not going to change it to your right?
What, you blockhead? Are you of the φύσιν of Laespodias (*Birds*, l. 1569)? (*I. e.*, according to the Scholia, left-handed and diseased in the feet.)

Chorus of Women: For I (*i. e.*, the chorus), because of my worth, wish to go to any extreme
With those who have φύσιν (probably native ability), charm,
Boldness, wisdom, patriotism
And prudence (*Lysistrata*, l. 545).

Chorus of Old Men (to the Women): . . . Since you are by φύσει flatterers (*Lysistrata*, l. 1037).

Mnesilochus: You said that I needed neither to hear nor see.
Euripides: For the φύσις of each of these is separate (*Thesmophoriazusae*, l. 11).

Euripides goes on to narrate how the eye and ear were formed originally, so φύσις might here mean *origin*.

Agathon: And Phrynicus. You no doubt have heard of him.
He was beautiful and beautifully dressed.
His dramas were for that reason beautiful,
For it is necessary that one perform in accordance to ones φύσει (*Thesmophoriazusae*, l. 167).

Chorus: Than a woman shameless by φύσει
Nothing can be worse, except women (in general) (*Thesmophoriazusae*, l. 531).

Mnesilochus (to a mother): You are by φύσει fond of progeny (*Thesmophoriazusae*, l. 752).

Euripides (to a Scythian bowman): Alas, what shall I do? To what words shall I turn?
For his barbarous φύσις (nature) would not receive them (*Thesmophoriazusae*, l. 1129).

Chorus: . . . But to roll
Onto the soft side
Is the part of a crafty man
And one who is by φύσει a Theramenes (*Frogs*, l. 540).

Chorus (addressing the Athenian audience): . . . Oh you most wise by φύσει (*Frogs*, l. 700).

Aeacus (speaking of the Athenian populace): He thought their judgment on the φύσεις of poets to be mere nonsense (*Frogs*, l. 810).

Chorus: For each of them has seen military service
And has learned the tricks of the trade with a book.
Furthermore their φύσεις (natural abilities) were very good
And now these have been sharpened (*Frogs*, l. 1115).

Euripides: At first Oedipus was a well-favored man.

Aeschylus: No, by Zeus, he was not, but was ill-favored by φύσει (perhaps by birth)
Of whom, before he was born, Apollo said
He should kill his father (*Frogs*, l. 1183).

Dionysius: Very good. Palamedes, you most wise φύσις (genius?) (*Frogs*, l. 1451).

Karion: This is a man by φύσει wretched (or, born to be wretched) (*Plutus*, l. 118).

Karion: Do you think me to be altogether such a man by φύσει
And that I never say anything sound (*Plutus*, l. 273)?

Chorus: . . . . . So impudent and knavish you are by φύσει (*Plutus*, l. 279).

Hermes: Then Pericles, fearing that he might share your misfortune,
Afraid of your φύσεις (natures) and your stubborn manner (*Peace*, l. 607).

Chorus of old men (dressed as wasps): Spectators, if any of you, seeing my φύσιν ('make-up'),
Should wonder at seeing me drawn in at the middle like a wasp (*Wasps*, l. 1071).

Chorus: You are the father of very skillful children.
First. . . . . .
And then Ariphrades, extremely cleverlike
Of whom (his father) once affirmed on oath
That he had spontaneously learned from his own clever nature (σοφῆς φύσεως)
γλωττοποιεῖν εἰς τὰ πορνεῖ' ἑκάστοτε (*Wasps*, l. 1282).

Chorus: It is hard to lose the φύσιν which one always has (*Wasps*, l. 1458).

Chorus: And knowing from of old that your φύσεις (natures or tastes) are as changeful as the seasons
And that you give up your old poets as you get older (*Knights*, l. 518).

The roots of the gethyum, having a φύσιν like garlic (*Frag.* CXXII, l. 2. Dind.).

At this point we may make certain general statements. Φύσις is used by these authors solely with reference to *living* or *personified* things.

Human beings	33 instances.
Gods	1 instance.
Animals	2 instances.
Plants	2 instances.
Hearing and Seeing	1 instance.
Personifications:	
Clouds of themselves	1 instance.
Justice as a pleader	1 instance.
Athens	1 instance.

It can, accordingly, be assumed that φύσις has some constant association with *vitality*. It serves as the expression for *nature* or *self* in general and as the source or condition of specific native capacities (as, "self-restraining," "quick-witted," "readily speaking," *etc.*).

Before turning to Plato, we may note that the instances in the older Sophists correspond with this literary use.

Instruction requires both φύσις and practice (Protagoras, *Frag.* 3).

For the power of the λόγος towards the ordering of the soul and the rectification by drugs of the φύσις of bodies have the same λόγος (Gorgias, *Frag.* 1113).

More are good from practice than φύσις (Critias, *Frag.* 9).
You (*i. e.*, the creative νοῦς), the self-born, the one intermixing your φύσις in the ethereal vortex (Critias, *Frag.* 19).
. . . a daemon . . . . . .
. . . endowed with divine nature (φύσιν θείαν) (Critias, *Frag.* 25).
. . . . . .

Prodicus's book, *Concerning the Φύσις of Man* (Prodicus, *Frag.* 4) and Critias's book, *On the Φύσις of Love or of the Virtues* (Critias, *Frag.* 42) are quoted.

In Book X of the *Laws* Plato presents a discussion of Φύσις with special reference to his naturalistic predecessors. This piece of controversy is, I think, our earliest and best source for obtaining an understanding of the colonial philosophies. The dialogue runs as follows (888E):

Athenian: Some persons say that all things which were, are, and will be, exist, some by virtue of their own nature, some by chance and some by art (τὰ μὲν φύσει, τὰ δὲ τέχνῃ, τὰ δὲ διὰ τύχην) . . . . It seems, they say, that the most beautiful and greatest things are brought to perfection by their own φύσις and by chance, while the smaller are produced by art which receives from φύσις (the self-producing) the primary great things and then proceeds to mold and form the lesser which we call artificial.

Cretan: How is this which you say?

Athenian: I will speak more plainly. They say that fire, water, earth, and air exist by φύσις and by chance, but none of these by art, while the bodies coming after these, *i. e.*, the earth, sun, moon, and the stars have come to be entirely through these (elements), being themselves without souls, each being born along by chance, according to the character of each, to where they fall together, fitting in some congenial manner, the hot with the cold, the dry with the moist, the soft with the hard. Thus all things have necessarily united by chance in a mixture of opposites. In this way the whole heavens came to be and everything in them and all plants and animals in turn. Even the seasons came to be from these conditions and not through intelligence nor some god, nor art, but, as we have said, by their own φύσις and by chance. Afterwards, art, generated later from these, itself mortal and from mortal sources, produced certain amusements little related to reality, certain semblances akin to those which painting, music, *etc.*, produce. The arts which produce any serious work are those which add their force to φύσις, as, *e. g.*, therapeutics, agriculture, and gymnastics. Indeed, they say that statesmanship works in part in conjunction with φύσις, but far more with art. Thus all legislation is not natural (φύσει), but artificial, of which the principles are not truths (*or*, realities).

Cretan: How is this?

Athenian: The gods, good sir, they say are an artificial product and not a natural growth (οὐ φύσει), being constituted by certain laws, different in different places according as different peoples agree to

legislate. And indeed things beautiful by φύσις are one thing and those by law another. Standards of justice, for example, are not at all by φύσις, but on the contrary every one continually disputes as to what they may be and is always changing them. These standards possess some authority after change, but it comes from art and convention and not at all from any self-sufficiency (φύσις). Such opinions pass among young men as the doctrines of the wise, the wise both among laymen and poets, who say that is right which forcibly succeeds. These doctrines bring impiety to the minds of young men inasmuch as the gods are not thought to be such as the law dictates. Hence seditions come as they strive for the naturally correct mode of life (τὸν κατὰ φύσιν ὀρθὸν βίον) which is to live as the master of others and not in servitude to legal authorities.

. . . . . .

Cretan: By no means, Stranger, but if there happens to be any belief at all on this matter, a worthy legislator should not give up, but should cry out in every way, as they say, and assist the ancient legal fiction that there are gods and such other matters as you have discussed. Thus he shall come to the aid of law itself and art, showing that each is a natural product (φύσει), or the product of something which is not less than φύσις, since it is the product of mind, working according to correct principles of reason. This you appear to have stated to me and of this I am now persuaded.

. . . . . .

Athenian: But tell me again, Kleinias, for you must be my partner in this conversation, does not the one who says these things [about the gods] probably consider fire, water, earth, and air to be the first of everything? To these he gives the name φύσις, while he considers that soul comes from these later.

Cretan: Yes, indeed.

Athenian: Then, by Zeus, we have discovered the source of this unreasonable opinion of these men who to some extent have dealt with inquiries concerning φύσις . . . . . .

Athenian: I will tell then the not entirely ordinary argument which is as follows. These reasonings which make souls without any divine element indicate what is really the first cause of generation and decay as a later production. Wherefore they err in their opinion as to what are gods.

Cretan: I don't quite see.

Athenian: They all seem to be ignorant of what the soul is like, of its power and that it originated among the first bodies before all of them and is the starter, rather than any of the others, of change and rearrangement. If this is so and the soul is older than the body, will not the things akin to the soul come to be before those which pertain to the body?

Cretan: Necessarily.

Athenian: Then thought, attention, reason, art, and law will be prior to the hard, soft, heavy, and light. So the greatest and most primitive accomplishments and activities will arise through art. These works of art will be first, while the so-called works of nature (*τὰ δὲ φύσει*) and *φύσις* itself—for the term *φύσις* is wrongly used in this sense(!)—will be later and have their beginning in art and reason.

Cretan: How is the term *φύσις* incorrectly used?

Athenian: Why, they wish to say that *φύσις* is the well spring of primary things (*γένεσιν τὴν περὶ τὰ πρῶτα*), but if the soul appears to be first instead of fire or air and to have originated among the very first things, then, in the truest sense, it may be especially said to be by *φύσις*. This is true, if the soul is shown to be before the body, but not otherwise.

In other words Plato says, if you do not call *φύσις* what I say is *φύσις*, you simply do not know Greek! Obviously the correct meaning is one which has to do with the *prime producer* or *production*, "the first cause of generation and decay." In Aristotle we come upon a more refined form of this dialectical twist as well as a clearer statement of its correct solution, so we may turn here for our final material.

In Chapter IV of Book Δ of the *Metaphysics*, Aristotle summarizes the meanings of *φύσις* under five heads:

(1) The coming to be of growing things, just as if one should accent the *υ*.[8] (2) That which is present in any growing thing from which its

[8] Burnet's remark (*Greek Philosophy*, p. 27, Note) is peculiar. "The question really is," he writes, "whether the original meaning of *φύσις* is 'growth'. Aristotle (*Met.* Δ, 4. 1014b, 16) did not think so; for he says that, when it means 'growth', it is as if one were to pronounce it with a long *υ*." Apparently it does not mean *growth* because when it means growth (!) it has another pronunciation. This is a misquotation from Aristotle to begin with (see above).

growing first starts. (3) The source from which the primary motion is present in each natural object *per se*. (4) That out of which any natural object is or comes to be, unorganized and unchanged from its state of potentiality, *e. g.*, bronze is said to be the φύσις of a statue or of bronze implements, wood of wooden things, *etc.* For the first substance (ὕλη) is preserved in the case of each of these. In this way some say the elements (στοιχεῖα) of natural objects are a φύσις, some fire, others water, others some other such thing, one or all. (5) Φύσις is the essence (οὐσία) of natural objects, *e. g.*, those who say φύσις to be the primary composition (σύνθεσιν), as Empedocles.

Finally, however, he concludes:

It can be gathered from what has been said that φυσις *in its primary and strict sense is the essence* (οὐσία) *of those things which have in themselves per se a source of motion.* For matter (ὕλη) as receptive of motion is called φύσις, and genesis and growing are called φύσις in so much as they are movements from this. Φύσις is the *source of movement* (ἡ ἀρχὴ τῆς κινήσεως) *present in some way, either potentially or actually, in natural objects.*

If we turn to Aristotle's own use of the word, we find that he never uses it in the fourth sense except when referring to the early Greeks. His reasoning is clear. Φύσις is the essence of those things which have their source of motion in themselves. However, certain of his predecessors called air, earth, fire, *etc.*, φύσις. Now air, earth, *etc.*, are matter. Therefore, for them φύσις equals matter, and[9] they were only looking for the material cause of things—that out of which all things have been made. The logical conclusion would rather be that they conceived air, earth, fire, *etc.*, as being *those things which have a source of motion in themselves—i. e.*, as the sources of generation. Aristotle tries to squeeze out at the end by a distinction between potential and actual, a distinction which was peculiar to his own philosophy.

It now remains to be seen whether this conception of φύσις will fit into the fragments of the early Greek phi-

[9] *Cf. Metaphysics*, Book I.

losophers and give more meaning to the traditional account of their thought and investigations. I give Burnet's translation wherever convenient to show that he could not consistently maintain his position.

Heraclitus: Though this discourse is true evermore, yet men are as unable to understand it when they hear it for the first time as before they have heard it at all. For, although all things happen in accordance with the account I give, men seem as if they had no experience of them, when they make trial of words and works such as I set forth, dividing each thing according to its nature (φύσις) and explaining how it truly is. But other men know not what they are doing when you wake them up, just as they forget what they do when asleep (*Frag.* 1, Burnet, 2).

To think is the greatest virtue, and wisdom lies in speaking the truth and acting intelligently κατὰ φύσιν (*Frag.* 112).

Nature (φύσις) loves to hide (*Frag.* 123, Burnet, 10).

Epicharmus: Eumaeus, wisdom is not only present in the one, but everything which lives has knowledge. And this is so, for, if you will observe well, the hens do not bring forth living young, but hatch them and make them to have life. However, φύσις alone knows how this wisdom exists, for it has learned this of itself (*Frag.* 4).

Parmenides: And you shall know the aetherial φύσις and all signs in the aether and the brilliant works of the pure lamp of the glowing sun, and from whence they arose. And you shall learn of the wandering works of the round faced moon and of her φύσις. And you shall know also from whence the heavens round about grew and how Necessity, controlling them, bound them to keep within the enclosure of the stars (*Frag.* 10).

Note in this fragment the great emphasis on *works* and *origins*. Burnet translates "origin."

For as the mixing (κρᾶσις) of the wide wandering members (Organe, Diels) is in each case, so is νόος present to men. For the φύσις (Beschaffenheit, Diels) of the members of men, one and all, is identical with that which thinks. For the more is thought (*Frag.* 16).

Empedocles: I will tell you another thing: there is no φύσις of any mortal, nor any end in destructive death, but only a mixing and interchange of what is mixed. But it is named φύσις among men (*Frag.* 8).

Probably referring to the growth of the embryo,

The φύσις of the members is separate, partly in man's [partly in woman's] (*Frag.* 63).

For if, supported on thy steadfast mind, thou wilt contemplate these things with good intent and faultless care, then shalt thou have all these things in abundance throughout thy life, and thou shalt gain many others from them. For these things grow of themselves into thy heart (ἦθος), where is each man's true nature (φύσις) (*Frag.* 110, Burnet).

Here in Parmenides and Empedocles we have the first examples of what might be called the technical use of φύσις. In three of the cases it refers to human beings. Burnet only attempts to translate two of these *matter* (Parmenides, 16; Empedocles, 63). Φύσις is the source of *thinking* in man; the source of his *formation* in the womb; the something which *expresses* a man's *character.*

On the other hand, Empedocles says that in a *strict sense* it does not pertain to mortals, but to the primary *roots* of things of which man is only a set combination. We must keep all this in mind in reading of the φύσις of aetherial things and of the moon with her *wandering works.*

The Pythagoreans and the minor philosophers will add little to our discussion, but I append the fragments, for the sake of completeness, along with the moral sayings of Democritus.

Philolaus: The φύσις is constructed in the Kosmos from limitless and limited, both the whole Kosmos and everything in it (*Frag.* 1).

With φύσις and ἁρμονία it stands thus: The being of things, which is eternal, and the φύσις afford divine rather than human knowing. Indeed it is not possible for any existing thing to be known by us unless there underlies this the being of the things, both limited and unlimited, of which the Kosmos is constituted (*Frag.* 6).

For the φύσις of numbers is a bearer of knowledge, a leader and instructor to every one of all doubtful and unknown things (*Frag.* 115).

Archytus: It seems to me that the mathematical sciences discern excellently, and it is not at all strange that they should correctly understand, the condition (οἷά ἐστι) of particular things. For understanding well the φύσις of the whole, they ought also to get good insight into the condition of the particulars severally considered. So they have given us knowledge of the velocity of the stars and of their rising and setting and concerning geometry, arithmetic, and spherical geometry,

and not least of music. For these mathematical subjects appear to us to be sisters, in as much as they concern themselves with the two primary forms of being (*i. e.*, number and size).

First they recognize that there can not be a sound without one thing striking against another. A blow, they say, occurs when bodies coming in opposite directions strike together. . . . But most of these are not such as can be known to our φύσις, partly because of the weakness of the blow, partly because of the distance from us (*Frag.* 1).

Diogenes of Apollonia: To sum up, it seems to me that all things are differentiated from the same thing and are the same thing. And this is easily seen, for if the things now in the universe, earth, water, air, fire, and any other things which appear to be in the universe, if any of these were different from any other, *i. e.*, different in its own nature (τῇ ἰδίαι φύσει) and the same being did not change and become transformed, things would not be able in any way to mix with one another, nor (do) benefit or harm to one another (*Frag.* 2).

Democritus: He who would be cheerful should not be employed at many things, private or public, nor should he do anything above his power (δύναμις) and ability (φύσις) to accomplish (*Frag.* 3).

Homer who was godlike in parts of his nature (φύσις) made a beautiful structure of poetry of all kinds (*Frag.* 21).

Φύσις and education are about the same, for education remodels the man and in remodeling him gives him another nature (φυσιοποιεῖ) (*Frag.* 33).

He called the atoms φύσιν. . . . for he said they were *scattered all around* (*Frag.* 168).

Chance is lavish, but unreliable; φύσις is sufficient unto itself, and accordingly with fewer, but more reliable, gifts she wins the greater part of hope (*Frag.* 176).

Young men sometimes have understanding and old men do not. For time does not teach one to be wise, but timely training and φύσις. (*Frag.* 183).

It is naturally (φύσει) a characteristic of the better man to rule (*Frag.* 207).

Whoever has need of a child would seem to me to do best, if he made an adoption from his friends. For the child will then be such as he wishes, as he can select such as he wants, one who seems to be well-disposed and κατὰ φύσιν obedient (*Frag.* 277).

It seems to men to be necessary both from φύσις and from ancient custom to procreate children. This is obviously so with the other animals, for all beget young κατὰ φύσιν and for no advantage, but when one is born they (the animals) go to great trouble, train it up as

far as possible, are very anxious over it as long as it is little and are pained if it suffer any hurt. Such is the φύσις of all which have a soul. But among men it has been held as a custom that one should derive profit from his progeny (*Frag.* 278).

Some men who are ignorant of the dissolution of mortal nature (φύσις) are conscious of their evil doings in life and are distressed with troubles and fears throughout the space of their life, making fictitious tales with respect to the time of the end (*Frag.* 297).

Φύσις is the inner nature or essence of things, their potency, that in them which has the *power of motion in itself*. A treatise on the φύσις of anything is a treatise on its essence as expressing development. Empedocles and Parmenides in their investigations were trying to find out what features of things would account for their present development or lack of development. With the atomists there is very little meaning left to φύσις outside of mere being and spatial motion. The atoms and the void are all that is. The atoms are φύσις because they are "scattered all around."

If, from the foregoing conclusions, we turn back to the earliest Greek speculation, the Ionian, we will read with no surprise Aristotle's surmise that the reason Thales names water as his primary substance was because he noticed plants required water and that the semen of all animals was moist. Far from looking for a matter out of which to construct the various "matters" of our world, the Ionians were looking *into* the world to find what was the prime mover, that which in the conglomeration of things caused them to "get a move on." Thales found it in water; Anaxamander in the rain of misty ἄπειρον; Anaximenes in the cosmic wind; Heraclitus in the fire, "consuming all things."

Aristotle's acuteness may stand as his own refutation when he wonders why none of them chose earth, "seeing it was the most common."

WALTER VEAZIE

AN IMPRESSION OF GREEK POLITICAL PHILOSOPHY

For many of us to-day the idea of the Greeks renders a service analogous to that once provided by a religious person's notion of God. Both conceptions have supported ideals to which believers were most seriously attached. This relation of the Greeks to the idealizing imagination of various times helps to account for the little interest that writers on Greek philosophy have felt in the dark and tragic side of Greek political experience. Greek philosophy has been too much allied with Greek art and poetry, and these, so long esteemed as the complete expressions of serene and perfect genius, pointed to no background of disorder. Euripides, who might be cited as an exception, was, until quite recently, seldom popular. The Greek was at home in the world, or was supposed to be, and the ideal of being at home in the world seems once more the essence of that ἀρετή "much labored for by the race of man," as Aristotle says in his "curious outburst into lyrics."[1] Philosophy, however, when it is most in earnest, begins not in vision, but in the search for it. It starts with disintegration and thrives not so much upon its own success as upon partial failure in mastering its problems. Sophocles and Phidias are not good parallels for Attic philosophy. Euripides, a better parallel, has been, as I just remarked, disliked by the orthodox because he was not serene and satisfied.

The political philosopher that warms most seriously to his business is likely to be impressed by the characteristic shortcomings of his time. Different times need to be corrected in different ways; to write political philosophy in the form of universal propositions is, as a rule, the most

[1] Gilbert Murray, *The Rise of the Greek Epic*, p. 79.

convenient and economical way of writing it in the imperative mood. To say that the true state, or the state according to nature, is thus and so, is usually to criticize actual society by contrasting it with what that society ought to be transmuted into. "It is on this dictatorial aspect of science that the political thought of the Greeks chiefly concentrated itself. The Greeks wrote their political science in the imperative mood."[2]

Whenever, then, in the writings of a political philosopher, we get the note of strong sincerity, it is probable that what is praised is not what a group possesses, but what it needs, and we shall be justified in distinguishing between the writer's ideals and the virtues of the people he writes about. Thus, to be specific, may it not be that the social and ethical ideals most insisted upon by Plato and Aristotle are misleading pictures of the Greek virtues? To quote from a very fine and noble little book:[3] "The very intensity of the State-life within the πόλις led in many cases to intense bitterness of faction when faction had once broken out, and to a corresponding weakness in the relations of the state to other states, or to the less civilized peoples beyond the Graeco-Italian world. Yet, on the whole, it must be allowed that the idea of the State, with all its fruitful civilizing results, has never been again so fully realized since the πόλις was swallowed up in the Roman empire; the ties that hold a state together have never been seen working together with such strength and vitality." And again, "We have in the *Republic* and *Laws* of Plato, and in the *Politics* of Aristotle, the thoughts of two of the profoundest of all thinkers on the nature of the state they lived in." Is this impression based upon Greek history or upon Greek philosophy? And if we are referred to the funeral oration of Pericles for an answer, Thucydides frankly tells us that

[2] Barker, *Political Thought of Plato and Aristotle*, p. 10.
[3] Warde Fowler, *The City State of the Greeks and Romans*, pp. 14–15 and 18.

he has put into the mouth of each speaker in his history not the exact words of his address, but the sentiments proper to the occasion, expressed as Thucydides thought the speaker would be likely to express them under the circumstances.[4] And the occasion was one that obliged Pericles, both humanly and diplomatically, to call for an elevation of the mind away from what was tragically concrete to what was imaginative and ideal. Be all that, however, as it may, the ideals of a people are a function of its experience, and the dramatic experience of the Greeks can not be left out of account in any attentive reading of their philosophy. To quote from another writer, one to whom I shall frequently appeal: "The peculiar and essential value of Greek civilization lies not so much in the great height which it ultimately attained, as in the wonderful spiritual effort by which it reached and sustained that height. The pre-Hellenic Aegean societies were in some ways highly developed, in others, a mere welter of savagery. But the rise of Greece began from something a little worse than the average level of barbaric Aegean societies. It began . . . in the dark age which resulted when even these societies, such as they were, fell into chaos."[5]

Dr. Murray contrasts the Greek with the self-confident and self-righteous Roman who "seems to have all the faults and virtues of successful men." "The Greek, less gregarious, less to be relied upon, more swept by impulse; now dying heroically for lost causes, now at the very edge of heroism, swept by panic and escaping with disgrace." And again, "The Romans had an almost steady history of stern discipline, of conquest and well-earned success. The Greeks, at the beginning of their history, passed through the very fires of hell. They began their life as a people, it would seem, in a world where palaces and temples were

[4] *Thucydides*, I, 22.
[5] Gilbert Murray, *Loc. cit.*, p. 29.

shattered, armies overthrown, laws and familiar gods brought to oblivion."[6] The epic calamity of the overthrow of the ancient civilization by the Völkerwanderung from the North would not be soon forgotten. Whether Hesiod's description of the fifth race of men refers to this or to something later, makes no difference here. Probably Dr. Murray's impression that the lines point to "the homeless, godless struggle of the last migration" is as good as any one else's. One feels in them, as he says, "something of the grit of real life." "Then the Fifth Men—would that I had never been among them, but either had died before or been born after! For now is a race of iron. And never by day shall they have rest from labor and anguish, nor by night from the spoiler. The gods shall fill them with hard cares . . . The father no more kind to his children, nor the children to their father, nor the guest true to the host that shelters him, nor comrade to comrade: the brother no more dear to his brother, as in the old days. Parents shall grow old quickly and be despised, and will turn on their children with a noise of bitter words. Woe upon them: and they hear no more the voice of their gods! They will pay not back to their parents in old age the guerdon of their feeding in childhood. Their righteousness in their fists! And a man shall sack his brother's walled city.

"There shall no more joy be taken in the faithful man, nor the righteous, nor the good: they shall honor rather the doer of evils and violence . . . There shall be a spirit of striving among miserable men, a spirit ugly-voiced, glad of evil, with hateful eyes.

"Then at the last, up to Olympus from the wide-wayed earth, the beautiful faces hidden in white raiment, away to the tribe of the immortals, forsaking man, shall depart aidos and nemesis."[7]

[6] *Loc. cit.*, pp. 113-114.
[7] *Loc. cit.*, pp. 102-103.

Here are two words of deep ethical meaning. What is most characteristic about them is, according to Murray, that like the sense of honor "they come into operation only when a man is free: when there is no compulsion." They have the virtue of spontaneity. The pressure of law, or public opinion, or settled habit would stifle them. "When Achilles fought against Eëtion's city, 'he sacked all the happy city of the Cilician men, high-gated Thebe, and slew Eëtion: but he spoiled him not of his armor. He had aidos in his heart for that; but he burned him there as he lay in his rich-wrought armor, and heaped a mound above him. And all around him there grew elm-trees, planted by the Mountain Spirits, daughters of Aegis-bearing Zeus.' That is aidos pure and clean, and the latter lines ring with the peculiar tenderness of it. Achilles had nothing to gain, nothing to lose. Nobody would have said a word if he had taken Eëtion's richly-wrought armor. It would have been quite the natural thing to do. But he happened to feel aidos about it." [8] "Perhaps the main thing which the philosophers got from aidos was Aristotle's doctrine of the Mean: the observation that in any emotion or any movement there is a possible best point, which you should strive to attain and shrink from passing. An uninspiring doctrine, it may be, with the emotion all gone from it. But that was what served Aristotle's purpose best.

"Again, there is an historical reason for the decline in the importance of aidos. Aidos, like Honor, is essentially the virtue of a wild and ill-governed society, where there is not much effective regulation of men's actions by the law. It is essentially the thing that is left when all other sanctions fail; the last of the immortals to leave a distracted world." [9]

Our esthetic and literary attitude toward poetry and our professional sentimentalizing of grief prepare us badly to

[8] *Loc. cit.*, p. 104.
[9] *Loc. cit.*, pp. 111–112.

feel the sincerity of lamentation in early literature. Yet no one would look upon the distress and indignation of a Belgian poet to-day as merely esthetic and literary. According to Thucydides, Attica enjoyed more peace than many other regions, only because her soil was too poor and thin to be worth taking. Elsewhere, in more favored parts, invasion and plundering were the rule. "The richest districts were most constantly changing their inhabitants." Thucydides's few words suggest the caravan of families, headed by its defeated men, driven by fate or by gods to inflict the same disaster upon others that they have suffered, and though, as he says presently, a poet may be expected to exaggerate, the reader of early Greek poetry has no call to doubt the honesty of all the pessimism he finds there. For, as William James has well remarked,[10] "the moment the Greeks grew systematically pensive and thought of ultimates, they became unmitigated pessimists. The jealousy of the gods, the nemesis that follows too much happiness, the all-encompassing death, fate's dark opacity, the ultimate and unintelligible cruelty were the fixed background of the imagination. The beautiful joyousness of their polytheism is only a poetic modern fiction." And "the difference between Greek pessimism and the oriental and modern variety is that the Greeks had not made the discovery that the pathetic mood may be idealized and figure as a higher form of sensibility."

Beauty does, somehow, transform the confusion of grief into serenity. Those passages of poignant sadness in Homer have been read by one generation after another, but the beauty has veiled their sincerity. "The strain of melancholy running through the Iliad and the Odyssey" has, however, "often been remarked upon. A note of sadness is heard in nearly all of the reflective passages. 'Surely there is nothing more pitiable than a man among all things

[10] *The Varieties of Religious Experience*, p. 142.

that breathe and creep upon the earth.' 'Of all the creatures that breathe and creep upon the earth, man is the feeblest that earth nourishes.' A multitude of passages might be quoted in illustration of such sentiments as these."[11] The same writer continues: "And if we consider the theoretical side of Homer's religion, we shall find no lack of reasons for the undercurrent of sadness in his poems. The existence of physical evil and suffering is accepted by Homer as a fact from which there is no escape, and ascribed, as we have already seen, to the immediate agency of the gods. 'This is the lot the gods have spun for miserable men, that they should live in pain; yet themselves are sorrowless.' It gives additional bitterness to the cup of human misery that the sufferer is uniformly represented as hated by the very gods who are responsible for his calamities; nor can he who has incurred the hatred of Heaven expect the sympathy of man."[12] As for these same Olympians, Benn felicitously describes their conduct among themselves as that "of a dissolute and quarrelsome aristocracy;"[13] and "the *experimentum crucis* is," Mr. Mahaffy observes, "the picture of the gods in Olympus. We have here Zeus, a sort of easy-going, but all-powerful Agamemnon, ruling over a number of turbulent, self-willed lesser gods, who are perpetually trying to evade and thwart his commands. At intervals he wakes up and terrifies them into submission by threats, but it is evident that he can count on no higher principle. Here, Poseidon, Ares, Aphrodite, Pallas, all are thoroughly insubordinate, and loyal to one thing only, that is, their party. Faction, as among the Greeks of Thucydides, had clearly usurped the place of principle, and we are actually presented with the strange picture of a city of gods more immoral, more faithless, and

[11] Adam, *The Religious Teachers of Greece*, p. 62.
[12] *Loc. cit.*, p. 63.
[13] *The Greek Philosophers*, p. 7.



more depraved, than the world of men."[14] Mahaffy characterizes this aspect of Homeric poetry as "the notorious levity and recklessness of the Ionic character developed in Asia Minor."[15] But poetry written for the entertainment of clan chiefs would naturally picture the family of the gods in colors that the princes on earth would use to idealize themselves. Butcher's chapter on Greek melancholy may be cited here. The author accounts in part for the early manifestation of what is unlike our favorite picture of the Greeks by "the hard and narrow selfishness of the ruling class, the fierce bigotry, the wild revenge of political faction, the sudden reversals of fortune and the instability of human affairs."[16] "In a single century, 620 to 520 B. C., five great empires—Assyria, Media, Babylonia, Layia, Egypt—had passed away with every circumstance of dramatic impressiveness; a still shorter period had witnessed the rise and fall of the tyrannies in Greece. In an age when the despot of to-day might to-morrow be an exile, when the triumph of political party meant frequently not only loss of power and place, but of home and property, and, it might be, of life for the vanquished—at such a time the poet and the historian could draw from a common inspiration."[17]

Greek history began, then, with people driven from their homes and from the soil that belonged to their gods and that contained their dead, the soil that was responsive to the magic their fathers had bequeathed to them, and upon which life was made orderly by particular taboos and invocations. To wander away was to lose the refuge of piety. And although the early inhabitants did not have to leave Attica because it was so poor a place, nevertheless

[14] *Social Life in Greece*, p. 38.

[15] Compare Murray's comments on *The Deceiving of Zeus*, in *The Rise of the Greek Epic*, chapter X.

[16] *Some Aspects of Greek Genius*, p. 135.

[17] *Loc. cit.*, p. 155.

so many people came to Attica when driven from their own territory, that Attica, Thucydides observes, could not contain them all and had to send out colonies to Ionia. Nothing better could be devised to disintegrate collective superstition than this shifting of populations, nothing better to stimulate intelligence than the frequent conflict with novelty, nothing better to promote social restlessness than concentration within areas that before long seemed too small for all those that wanted to live there. The social order that finally emerged was of the type that a fighting group, a group of chiefs and followers would naturally organize—a military aristocracy with, probably, small peasant proprietors. Wealth of the nobility was chiefly in herds. Homer speaks of Argos as abounding in horses, and the men of Hesiod's "golden age" were great landed proprietors. "The bounteous earth bore fruit for them of her own will, in plenty and without stint. And they in peace and quiet lived on their lands with many good things, rich in flocks and dear to the blessed gods."[18] The meadow state (Gaustaat) seems to have preceded the city state. To be shut up in a city where one person tends to become as good as another is an abomination to the man whose dream is of horse-breeding and horse-handling. "And she (Thyis, daughter of Deukalion) conceived and bore to Zeus, the hurler of the thunderbolt, two sons, even Magnes and Makedon, rejoicing in horses, who had their dwellings around Peiria and Olympus;" and "From Hellen, warlike king, sprang Doros and Zonthos and Aiolos, rejoicing in horses."[19]

But Hesiod is the voice of a growing social unhappiness. Suits must be heard before "bribe-devouring princes," and these are likened to a hawk, bearing in his talons a nightingale to which the hawk speaks as follows: "Wretch!

[18] *Works and Days*, Mair's translation, p. 5.
[19] *Loc. cit.*, *Frags.* 4 and 7.

wherefore dost thou shriek? Lo! thou art held in the grasp of a stronger. There shalt thou go, even where I carry thee, for all thy minstrelsy. And, as I will, I shall make my meal of thee, or let thee go. A fool is he who would contend with the stronger. He loseth the victory and suffreth anguish with his shame." And although justice is so much better than hubris, nevertheless, "There is the noise of the haling of justice wheresoever bribe-devouring men hale her, adjudging dooms with crooked judgments. And she followeth weeping, clad in mist and fraught with doom, unto the city and the homes of men who drive her forth and deal with her crookedly." But where justice is esteemed, people "flourish with good things continually, neither go they on ships, but bounteous earth beareth fruit for them."[20] Unfortunately for the old order, men have already begun to go on ships, even the Boeotians, "for money is the life of hapless men," and commerce and money meant the industrial revolution.

The change from barter to the use of money in a form convenient for accumulation and exchange was for the small producer, at the beginning, as great a calamity as was the invention of the steam-engine. "It created an economic revolution in the Mediterranean communities comparable to that from which Europe is only just recovering (if she is recovering) to-day."[21] It was a long time before there could be a market with its standardized prices. Those who have money to exchange have all the advantage. Money is the one thing in universal demand. All products compete for it. "The queer thing about money," says Theognis over and over again, "is that you can never have too much of it. Herein it is different from any of the things you can buy with it. Food, clothing, houses, above all, wine—there is a limit to them all. But to money there is

[20] *Loc. cit.*, pp. 8–9.
[21] Zimmern, *The Greek Commonwealth*, p. 113.

no limit; there is only one thing like it, and that is wisdom." [22]

Money was a new power, and commerce a way of making it. It freed men from dependence upon the farming and herding nobility and sent them moving about the world, where, however their ventures turned out, they were bound to win a cosmopolitan mind. The old nobility of birth gave way to an aristocracy based on private property, a class more oppressive than the one it had replaced because less restrained by θέμις and not yet subject to δίκη. But it was a step toward democracy, since political position now came not from Zeus, but from human enterprise. "But there were two forces that sought to overthrow this rule—democracy and tyranny. These two were hostile to each other, but whichever made any progress accomplished it at the expense of those in possession of political power. The ancient order yielded ingloriously to Solon and Pesistratos." [23]

It yielded, however, slowly, and in all probability its resistance was accompanied with more violence and caused more disorganization than we have any record of. The attempt of Cylon and his followers, so picturesquely full of primitive and barbaric elements, was, perhaps, remembered only because the Alkmaeonidae were known to be "accursed" as late as the fourth century. Thucydides reports that "these accursed persons were banished by the Athenians, and Cleomenes, the Lacedaemonian king, again banished them from Athens in a time of civil strife by the help of the opposite faction, expelling the living and disinterring the dead." But later, a great deal later, "the Lacedaemonians desired the Athenians to drive away this curse, as if the honor of the gods were their first object, but in reality because they knew that the

[22] *Loc. cit.*, p. 117.
[23] Willamovitz, *Aristoteles und Athen*, II, p. 52.

curse attached to Pericles, the son of Xanthippos by his mother's side, and they thought if he were banished, they would find the Athenians more manageable."[24] As Willamowitz observes, "We can not doubt that the seventh century saw many such incidents, since, in the sixth century, in spite of the constitution of Solon, the power and greed of the great families seem not in the least diminished, and the struggles that bring freedom to Athens continue to bear the mark of the contests for power by the clans."[25] This unsurpassed story of blood and taboo points to a state of things that Draco's codification of the law was intended to remedy. Long before, a step toward democracy had been taken when officials were elected to office for a term of years instead of holding them for life. Such a change must have meant friction and perhaps violence. Now the codification and publication of the law indicates that something had become unendurable. No one but a Eupatrid could publish the law, and there is no occasion for surprise if what we know of Draco's code shows it to express the Eupatrid point of view. There is no concern for the materially unfortunate, no economic remedies are provided. If any concessions are offered, it is to the new aristocracy of wealth. But here, candidates for the higher offices must have not only income, but unencumbered property. Since the worst feature in the situation that Solon had to remedy was the fact that one whole class was in many cases in debt to another and the security for the debt was the borrower himself or the members of his family, it is clear that the requirement that property be unencumbered could not fail to concentrate political power in the hands of the rich. The provision may, of course, have been intended to keep men out of office who could be under the pressure of creditors, but the result would

[24] *Loc. cit.*, I, pp. 126–127.
[25] *Loc. cit.*, II, p. 55.

seem to be that "the old nobility sacrificed its exclusive privilege of blood only that it might with greater safety continue to oppress the multitude. Even the right to bring complaints for injury before the Areopagos—a right now open to all—could not have availed the client against his master. To the Thete, therefore, the Draconian measures meant, for the time being, simply this, that one of his oppressors had taken another into partnership."[26] These are the bribe-devouring princes, not limited to Attica, that Hesiod may be supposed to mean by his "swift-flying hawk, the long-winged bird," his symbol of ὕβρις. And to Athens as well as to any city of Boeotia could, no doubt, be applied his lines, "The eye of Zeus, that seeth all things, and remarketh all, beholdeth these things too, and He will, and He faileth not to notice what manner of justice this is that our city holdeth. Now may neither I nor son of mine be just among men. For it is an ill thing to be just if the unjust shall have the greater justice. Howbeit these things I deem not that Zeus, the Hurler of the Thunder, will accomplish."[27] Zeus must have listened to the cry for justice that went up in Attica, but he waited a generation. At length came Solon, according to his legend the ideal sage; he was given authority, it seems, to enact the most drastic reform legislation, which means that social conditions were again unendurable.

To what extent the picture of Solon is drawn by the idealizing imagination, it is impossible to say. Thucydides never mentions him, though he is, in our account, a model of that aristocratic temperance that the Socratic philosophy summons us to admire. Though probably a Eupatrid tracing his descent from Codrus, it is not surprising that Aristotle claims him for his middle class. However, what

[26] Boetford, *The Athenian Constitution*, p. 156.
[27] *Works and Days*, p. 10.

interests us here is not so much the nobility of the man as the conditions he was invited to reform.

If we assume that Solon's legislation was intended to remedy existing evils, we get, quite aside from the most important of his laws, those connected with the relief from debt and with the functions of the Areopagos, a curious impression of Athens as a place where manners and morals were in a rather desperate case. Of course, since each party hoped for its own advantages, no one was satisfied. It is not to be wondered at that Solon bought himself a trading vessel and sought repose away from Attica.

But sedition was not ended. Only dire peril from without could accomplish that. Now comes the tyranny of Pesistratus, a man of wisdom and moderation, who, probably, more than any other Greek statesman exemplified Plato's ideal of the reasonable ruler. Pesistratus was, however, a constitutional ruler. Anticipating Aristotle, he made law the supreme authority, in this case the law of Solon. Yet, he was forced by his opponents twice to leave the city. After ruling wisely and successfully for nineteen years, Pesistratus died at an advanced age. Now comes the episode of Harmodias and Aristogiton, the expulsion of the Pesistratidae by the Lacedaemonians called in by those same Alkmaeonidae now long in exile and seeking to return and able to influence the oracle at Delphi. Party strife continues until in the year 508, some nineteen years after the death of Pesistratus, one man having been elected archon, another, Cleisthenes, is determined he shall not occupy the office. Again the Spartans are called upon in behalf of the elected candidate. Cleisthenes flees and seven hundred families charged with supporting him are exiled. But the oligarchic enterprise fails, its leaders are forced to withdraw from Attica, and their adherents are massacred by the Athenians of demo-

cratic sympathies. Thus did the city, when left to its own devices, practise the moderation enjoined by Solon. The fragments of Solon are so interesting and refer so unmistakably to problems similar to those that later writers sought to assuage with the pharmaka of philosophy, that a translation of those that are relevant is here appended.[28]

My eyes are opened, and sorrow fills my heart to see this most ancient land of Ionia tottering to its fall (*Frag.* 3).

Never shall our city perish by the will of Zeus and of the blessed gods that are deathless, for Pallas Athene, high-hearted guardian, daughter of a mighty sire, holds over it her hands. But they, dwellers themselves in the town, seek in their folly to destroy a mighty state, bribed with money. A wicked mind is that of the people's chiefs; out of this great arrogance shall come upon them many woes, for they know not how to check their greed, nor how to let sobriety rule over their feasting.

Trusting in wickedness they increase in wealth.

They rob, respecting neither possessions of the gods nor of the people, each one wheresoever he may, bent on plunder; nor do they keep the holy ordinances of Justice, who, though in silence, marks too what befalls, and what has come to pass, yet shall she in the fullness of time surely come, exacting atonement. Already has this befallen all the city, a wound not to be avoided. Speedily it comes to evil slavery that awakens civil strife from its sleep, her that of many a one destroys the lovely youth. For soon is our beloved city destroyed by her foes in conflicts dear to the unrighteous. These are the evils that go to and fro among the people. Of the poor, many sold into slavery depart into a foreign land, fettered with shameful bonds. [All unwilling they endure the loathsome wrongs of servitude.] Thus the trouble of the people comes to the home of each. No longer do the outer gates bar it out; it leaps the lofty wall: surely it finds you, though you flee to the chamber's innermost corner. This my heart moves me to proclaim to the folk of Athens, that lawlessness prepares for the city woes uncountable, but law-abiding reveals all things in befitting harmony, putting, meanwhile, fetters upon the bad. She makes rough places smooth, stops

[28] The text and the arrangement is that of the convenient collection in Gilliard, *Quelques Réformes de Solon*, Lausanne, 1907. (For assistance in the rendering I am under great obligations to colleagues in the department of Greek.)

greed, and over arrogance she draws a veil. She withers the growths of recklessness, makes crooked judgments straight, and softens deeds of insolence. She ends the bitterness of grievous strife: under her rule, all human things endure in order and in reasonableness (*Frag.* 4).

Thus would the people best follow its leaders, were it not too much relieved nor too hard pressed (*Frag.* 6).

For surfeit breeds arrogance, when much wealth waits on men whom reason does not serve. You who have beyond measure seized on many good things, put measure in your proud minds, subduing the haughty temper in your hearts; for neither shall we be persuaded nor shall those things be yours (*Frag.* 8).

Lines intended to explain and justify the Poet's work in politics

To the people, I have given the power that sufficed for them, not diminishing their privileges nor increasing them. But to the powerful and to them that are conspicuous for wealth, I gave counsel to own nothing stained with dishonor. Holding before each party a mighty shield, I took my stand, nor did I grant to either a triumph without justice (*Frag.* 5).

In great undertakings hard is it to please all (*Frag.* 7).

If I have respected my country, and have not seized upon tyranny and unrelenting violence, polluting and disgracing my fame, I do not regret; for thus I deem I shall most completely win mankind (*Frag.* 32).

Solon was not born to be a man of wisdom in counsel, for when the gods sent glorious gifts, of his own will he did not accept them. Encompassing his prey, amazed he did not haul in the great net, but lost his courage and his wits. Could I but for a day rule singly over the Athenians, and seize unstinted wealth, I would give my skin for a winesack and my family for destruction (*Frag.* 33).

But those that came bent on plunder had high hopes, and each of them deemed he was about to find great wealth, and thought that I, though smooth in speech, would show a rough intention. Foolishly, then, they talked; now wrathfully, with eyes askance, all look at me as at a dangerous foe. Unjust! For what I promised that have I with the help of the gods accomplished. And more besides have I not wrought in vain. Nor does it please me to do aught by force of tyranny, nor am I glad that the nobles should have but equal portion with the base of our fatherland's rich soil (*Frags.* 34 and 35).

Trimetra

For what reason I, when driving the car of state, stopped before the people had got any of these things, to this the mighty mother of all Olympian deities would best bear testimony before the court of Time, black Earth, she that was in bondage and that now is free; many of her mortgage stones I overthrew that were set up. Many sold into slavery did I lead back, back to Athens, their divinely-founded fatherland, some unjustly and some justly sold. Some, fleeing from necessity not to be opposed, no longer spoke the Attic tongue, so much had they wandered; others, at home, enduring dire slavery and trembling at a despot's ways did I set free. These things, indeed, by force of law I did, yoking strength with justice, and I wrought as I had promised. Equal laws I wrote for low and high, building straightforward justice for every man. Had another held the goad I held, a man of folly, greedy for gain, he would not have held in check the people. Had I granted what was pleasing to my opponents, and on the other hand, what the other party designed against them, the state had been bereaved of many men. For their sake, facing boldly toward every side, I whirled as does a wolf among many hounds.

The people, if one must speak frankly, never in their dreams beheld what now they have. [If I had left them as they were] the noble and the strong would praise me, making me a friend.

Aristotle introduces the next verse by the words, "If any one else had held this responsibility."

He would not have controlled the people, nor would he have rested till he had churned the butter from the milk. But I, as between armies, set up a limit (*Frag.* 36).

Lines against the tyranny of Pesistratus

From the clouds is wont to come the storm of snow and hail, and from the gleaming lightning, the thunder, and from powerful men the undoing of the state. Into subjection to a tyrant, the people fell through want of foresight. Not easy is it later to hold in check one raised too high, but without delay must all things be considered (*Frag.* 9).

A little time will show my madness to the townsmen, when the truth shall come into our midst (*Frag.* 10).

If through your own perversity you have suffered grievous things, blame not the gods for it, since yourselves have magnified these men by giving them guards. And for this is evil servitude your portion. Each

one of you walks in the fox's track; in all of you is a fool's mind, for you attend to the tongue and the speech of a wily man, heeding in no wise the deed that is being wrought (*Frag.* 11).

The sea is stirred by the winds, but if one move it not, it is of all things most evenly disposed (*Frag.* 12).

The very interesting Fragment 13 is too long to quote and not all of it is relevant; the following portion (16–32) should not be overlooked:

For not long shall the works of hubris prosper among mortals. But Zeus watches over the issue of all things. As in spring, a whirlwind from the clouds suddenly scatters them, one that stirs to its depths the unharvested sea, heaving with many waves, bringing ruin to fair works over the wheat-bearing earth; and it reaches unto heaven, the lofty seat of the gods. And straightway the air is clear, and the might of the sun gleams along the fair and fruitful earth, and not a cloud is to be seen. Such the vengeance of Zeus, keen in wrath, but not like a mortal, mindful of every sin itself. Yet not forever shall he pass unmarked who has an evil mind; surely at last it shall show forth. One pays speedily, another later, and though they escape and the fate of the gods catches them not, yet surely shall it come in time; the innocent pay the deeds, the children or the family hereafter.

No mortal is happy, all are wretched, as many as the sun looks down upon (*Frag.* 14).

Many base men are rich, while good men are poor; but we would not take their wealth in exchange for virtue, for that is a support forever; but human wealth, now one man has and now another (*Frag.* 15).

Most hard it is to know the unseen measure of wisdom that alone tests all things (*Frag.* 16).

A history like this makes political philosophers. It is often said that political thought begins with the Greeks, but if one asks when it began, one must seek its origin in a time long before the day when the philosophical classics that we possess were written. Political thinking began with political discontent; with the sense of the injustice of a class and the dim and hardly articulate consciousness of a righteous cause. It may have begun even earlier than that, for it must be present in some measure as soon

as men seek to have a polis and to manage its affairs. And if we understand the synoikismos as the coming together into one group of a number of smaller groups, each with its own aristocratic authority, tradition, and exclusiveness, and conceiving itself as having the unity and solidarity of a natural family, the problem of organizing these rival units into a coherent group may well have been the first political problem, with the problem of rich and poor, the few and the many coming later. Greek political philosophy was quite naturally speculation on the best way of getting and maintaining the cooperative group, because such a group-organization was so necessary and—for such radical individualists—frequently so impossible. What seems to us the first political virtue, the capacity for compromise, the Greeks hardly possessed, and their use of the lot, that seemed to Socrates such a contemptible evasion of responsibility, served really, whatever its origin, for the defense of minorities. "When the balance of power had swung over, everything went with it, and the change was thorough and radical." Thus there was little in Greece of what makes a steady and successful social order, gradual political development. "She substitutes the law-giver for the code, and the law-giver was the creature of the revolution."[29] Their anxiety about extremely effective individuals reveals their political instinct for what such individualism was likely to signify among themselves. Plutarch who, in spite of his pious credulity, must be accepted as a source of information, explains that "ostracism was instituted not so much to punish the offender as to mitigate and purify the violence of the envious, who delighted to humble eminent men, and who, by fixing this disgrace upon them, might vent some part of their rancor."[30] And of Pericles, while young: "Reflecting, too, that he had a considerable

[29] Greenidge, *Handbook of Greek Constitutional History*, pp. 6 and 139.
[30] *Life of Themistocles*, Dryden-Clough, Vol. I, p. 256.

estate, and was descended of a noble family, and had friends of great influence, he was fearful all this might bring him to be banished as a dangerous person; and for this reason meddled not at all with state affairs, but in military service showed himself of a brave, intrepid nature." And presently: "Cimon also was banished by ostracism, as a favorer of the Lacedaemonians and hater of the people, though in wealth and noble birth he was among the first, and had won several most glorious victories over the barbarians, and had filled the city with money and spoils of war, as is recorded in the history of his life. So vast an authority had Pericles obtained among the people." [31]

What prevented compromise, of which Solon and Pesistratus so well understood the necessity, was the passion for *αὐταρκία*, the virtue fanatically insisted upon by the Stoics, who revealed its anti-social implications, but which was from the beginning the ideal and the superstition of the Hellenic character. The statement, then, that "thus it would appear that Greek political thought began with democracy, and in the attempt of the 'many' to answer by argument the claims of aristocratic prestige," [32] is substantially correct. But though Greek political speculation began with the problems whose reality was felt most keenly by the "many," it closed, if we somewhat arbitrarily close such a history, with the *Politics* of Aristotle, with the problems of the "few." Always the message of philosophy was moderation, always the virtue most praised because most needed was *σωφροσύνη*.

How is it, one may ask, that the political thinkers of a people whose career had been so full of revolution could seriously insist upon the immutability of laws, could dream of finding the best and therefore final form of the state? I am not looking for the fallacy of any single cause, but if

[31] *Life of Pericles*, Dryden-Clough, Vol. I, pp. 320 and 330.
[32] Barker, *Political Thought of Plato and Aristotle*, p. 4.

Greek history shows nearly everywhere, the determination of one class to write the laws for another, we must conclude that when either party had once written the laws, its chief concern would be to make sure of their permanence. To any law-giver, change meant not progress, but relapse; it meant the substitution of other laws from the other and execrable point of view. Solon sought, we are told, to establish his constitution for a hundred years. It was only through the wisdom of Pesistratus, the tyrant, that it was tried at all.

"Plato had no physics," says Santayana, "and Aristotle's physics was false." It was false because of the teleological point of view that makes the wisdom of Greek ethics and politics. The Greeks were political philosophers before they speculated about physics. Or at least, their experience of political issues was far more abundant and far better calculated to provide significant categories. It has been said[33] that the category of φύσις arose in the course of physical speculation, and was taken over by political philosophy. On the other hand, the relation between early Greek philosophy and legislation was very close, a connection that made it easy to take ethical and legal metaphors for serious descriptions of nature. Consider for a moment this statement: "However much attention the physical philosophers may have paid to political life, their political theory was but an offshoot of their cosmology, and an accident of their attempt to find a material substratum out of which the world of changes was produced."[34] Yet, the same writer continues, "When we attempt to discover what Athenians were thinking in the later fifth century, we seem to see men reflecting primarily about politics and the world of man's conduct and institutions: if they turn to physics, it is 'by way of illustration', and to get

[33] Burnet, *International Journal of Ethics*, Vol. VII, pp. 328, *et seq.*
[34] Barker, p. 24.

examples (which they fancy will serve as proofs) for their political ideas." The parallel between the law of the world and the law of the state which appears in the declaration of Heraclitus "that the Furies would track down the sun if it left its course finds its counterpart," says Barker, "in the saying that the people must fight for their law as much as for their city's walls." Now there can be no doubt that what Heraclitus really knew about was cities fighting for their laws, and we may at least ask the question whether it was not a party rather than a city that was in the habit of fighting for its laws. The conservatives, *i. e.*, the aristocratic party, may be more appropriately said to fight for its laws, embodying the ancient justice of the city, than the party that seeks to introduce progressive innovations. The ancient justice of the group is what is common because bequeathed to all; it has the sanction of religion; of course its substance is divine. And when a Eupatrid, holding the office of βασιλεύς and lamenting, as he must have done, over the mutations of established things, says that all must keep to their appointed courses or suffer some cosmic penalty, is it likely that metaphysical considerations "led Heraclitus to adopt an aristocratic temper?"[35] Or did an aristocratic temper influence the metaphysics? I am seeking less to argue the question than to ask it; but it seems improbable that there can have been any such abrupt transition from physical to ethical speculation as the histories of philosophy are accustomed to describe. Plutarch, in explaining that Themistocles could not possibly have had for a teacher any one who was a contemporary of Pericles, continues: "They, therefore, might rather be credited who report that Themistocles was an admirer of Mnesiphilus, the Phrearrian, who was neither rhetorician nor natural philosopher, but a professor

[35] Barker, p. 23. Many expressions in the above paragraph are taken from Mr. Barker's admirable work, to which I cordially acknowledge my obligation.

of that which was then called wisdom, consisting in a sort of political shrewdness and practical sagacity, which had begun and continued almost like a sect of philosophy from Solon; but those who came afterwards and mixed it with pleadings and legal artifices, and transformed the practical part of it into a mere art of speaking and an exercise of words, were generally called sophists. Themistocles resorted to Mnesiphilus when he had already embarked in politics." [36]

The real founder of Athenian democracy, if one may give so much credit to any one man, was not Solon, but Cleisthenes.[37] Political strife has from now on a different character. Under the old arrangement of social groups, the great families fought among themselves for the possession of office. The reform of Cleisthenes consisted chiefly in such a reorganization and redistribution of social groups that the aristocratic and exclusive self-consciousness of the clans gradually disappeared. Even if Athens was not transformed under Cleisthenes "from the clan state into the political state," [38] nevertheless the most serious obstacle to that transformation was removed, and the state assumed a much more organic character, a construction of interrelated and cooperating parts, one that might be described by analogies drawn from living nature, and have as its ideal the healthy state of a natural organism. Only for a little while, however, was the enthusiasm for sedition abated. But in that little while, Greece lived her great hour. The reader of Herodotus shudders, however, to see the Greek allies escaping treachery to one another by so narrow a margin. And that so disciplined a soldier as Themistocles should be carried away by egotism, points to conditions that we commonly overlook. "And he yet more provoked the

[36] Plutarch, *Themistocles*, p. 233.

[37] Francotte, "La Polis Grecque," in *Studien zur Geschichte und Kultur des Altertums*. Band I, Heft 3, p. 4.

[38] Botsford, *Loc. cit*, p. 198.

people by building a temple to Diana with the epithet of Aristobule or Diana of Best Counsel, intimating thereby that he had given the best counsel not only to the Athenians, but to all Greece. . . . At length the Athenians banished him, making use of the ostracism to humble his eminence and authority, as they ordinarily did with all whom they thought too powerful, or, by their greatness, disproportionable to the equality thought requisite in a popular government."[39]

"The remark has been made, that, if Aristotle could have seen through some magic glass the course of human development and decay for the thousand years following his death, the disappointment would have broken his heart. A disappointment of the same sort, but more sharp and stinging, inasmuch as men's hopes were both higher and cruder, did, as a matter of fact, break the hearts of many men two or three generations earlier."[40] That was when Thucydides recorded his great disillusion. A brief span of years had seen a high enthusiasm for progress, an enthusiasm based, no doubt, upon many things. "But for one thing, there was the extraordinary swiftness of the advances made; and for another, there was a circumstance that has rarely been repeated in history—the fact that all the different advances appeared to help one another . . . And Democracy was at this time a thing which stirred enthusiasm." A speaker says in *Herodotus* (III, 80): "A tyrant disturbs ancient laws, violates women, kills men without trial. But a people ruling—first the very name of it is so beautiful, 'Isonomie' (Equality in law); and secondly, a people does none of these things."[41] As a symbol of that time's first promise, we might take the picture of the young Sophocles leading the chorus of boys in the celebration of the victory of Salamis; and as an expression of it the chorus in the

[39] Plutarch, *Themistocles*, p. 255.
[40] Gilbert Murray, Introductory essay to translation of *The Bacchae*, p. xxi.
[41] *Loc. cit.*, XXIII–XXIV.

Antigone: "Much is there marvelous, but naught more marvelous than man. Over the foaming sea in winter's wind he goes, moving the waves that roar around. That greatest of the gods, the everlasting and unwearied earth, he wears away, wheeling his ploughshare through it year by year, forcing the mule to trace his furrow."[42] Surely a contrast to Solon's vision of navigation and ploughing. "A poor man, compelled by works of poverty, thinks he surely will gain wealth. One strives for one thing, one for another. One wanders over the sea in ships, longing to bring home a profit of fish, driven ceaselessly by grievous winds, nor ever spares his life. Another toils for hire throughout a year, cleaving the tree-bearing soil, minding the crooked plough for others." [43]

Perhaps the passage so eloquently cited by Dr. Murray does not testify so unequivocally to the writer's democracy as we should like to believe. The next speaker in the conversation replies that he can not agree to the sentiment just expressed. "For there is nothing so void of understanding, nothing so full of wantonness as the unwieldy rabble. . . It rushes wildly into state affairs with all the fury of a stream swollen in the winter and confuses everything."[44] And there follows a praise of monarchy which Plato would certainly endorse. Whatever the vision of democracy that cheered Herodotus in his prime, "It was some twenty-five years later that an Athenian statesman of moderate, or rather popular, antecedents, said in a speech at Sparta:[45] 'Of course, all sensible men know what Democracy is, and I better than most, having suffered, but there is nothing new to be said about acknowledged insanity.'"[46] The affairs of Corcyra, as

[42] Palmer's translation, p. 43.
[43] *Frag.* 13, 41–48.
[44] *Herodotus*, III, 81. Rawlinson's translation.
[45] *Thucydides*, VI, 89.
[46] Gilbert Murray, *loc. cit.*, p. XXV.

described by Thucydides (III, 81–84), illustrate the worst that the second speaker in *Herodotus* can have imagined. The description is too powerful and too concentrated to summarize. For seven days, while the Athenian admiral with sixty ships remained, come to espouse the popular party, the members of that party "continued slaughtering those of their fellow-citizens whom they deemed their enemies; they professed to punish them for their designs against the democracy, but in fact some were killed from motives of personal enmity, and some because money was owing to them by the hands of their debtors. Every form of death was to be seen; and everything and more than everything that commonly happens in revolutions happened then." The end of the story (IV, 46–48) can hardly be surpassed in horror. "Thus the Corcyreans in the mountain (oligarchs) were destroyed by the people, and, at least while the Peloponnesian war lasted, there was an end of the great sedition. The Athenians then sailed for Sicily, their original destination, and there fought in concert with the allies." The war had been in progress four years. It continued twenty-three years longer. In this year Plato was born. And when he was fourteen years old, came the Athenian disaster at Syracuse, of all Hellenic actions, "the most glorious to the victors, the most ruinous to the vanquished; for they were utterly and at all points defeated, and their sufferings were prodigious. Fleet and army perished from the face of the earth; nothing was saved, and of the many who went forth, few returned home."[47] Two years later, during the brief experiment in oligarchy, and while the city was in a state of revolution[48] came a defeat that threatened to shut the Athenians out of Euboea. "Euboea was all in all to them now that they were shut out from Attica. The

[47] *Thucydides*, Jowett's translation, VII, 87.
[48] *Loc cit.*, VIII, 95.

Athenians were panic-stricken. Nothing which had happened before, not even the ruin of the Sicilian expedition, however overwhelming at the time, had so terrified them. The army at Samos was in insurrection; they had no ships in reserve, nor crews to man them; there was revolution at home—civil war might break out at any moment: and by this new and terrible misfortune they had lost, not only their ships, but what was worse, Euboea, on which they were more dependent for supplies than on Attica itself" (VIII, 96). But the result was a return to limited democracy. "This government, during its earlier days, was the best which the Athenians ever enjoyed within my memory. Oligarchy and Democracy were duly attempered. And, thus, after the miserable state into which she had fallen, the city was able to raise her head" (VIII, 97).

Thucydides bequeathed his history to mankind as an eternal possession. Did he know, when he wrote that announcement, what his book was to contain? In any case, he knew that a matchless opportunity had come to observe the behavior of people under conditions that call mightily for the virtue of moderation, and the guiding power of reason, an opportunity to watch how political institutions exhibit their excellences and their defects. It is hard to cease from quoting him. The feeling of mankind toward Athens (II, 9), the moral degeneration consequent upon the plague (II, 53), and the reminder by Pericles, that Athens had become a tyrant city, must be alluded to. The reader of *Thucydides* shares in his author's disillusion.

Xenophon, who continues the story of Hellenic affairs, reveals a less emancipated mind than Thucydides. His history, though there is much less temptation to quote from it, sustains our disillusion. One is tempted to say that his thinking is a little orthodox and academic. He shared the political and ethical preconceptions that were current among experienced and educated men. One of these, "the

ethical doctrine which is a leading theme of Herodotus's histories, concerning retributive justice Ὕβρις — Ἄτη — Νέμεσις whether in men or states," [49] is of particular interest. The justice that Solon prophesied was visited upon Athens for the arrogance and recklessness that Thucydides describes. When the news came of the defeat that lost the war, "There was mourning and sorrow for those that were lost, but the lamentation for the dead was merged in even deeper sorrow for themselves, as they pictured the evils they were about to suffer, the like of which they had themselves inflicted upon the men of Melos, who were colonists of the Lacedaemonians, when they mastered them by siege. Or, on the men of Histiaea and Torone; on the Aeginetans, and many another Hellene city." [50] Plato was twenty-three years old. The second experiment in oligarchy was quite retribution enough. The tyrant city had its own experience of tyranny. The parties came finally to an understanding. "The oath they bound themselves by consisted of a simple asservation: 'We will remember past offenses no more,' and to this day the two parties live amicably together as good citizens, and the democracy is steadfast to its oath." [51]

Thus did Xenophon conclude the narrative undertaken by his great predecessor. But he proceeds to describe the even clearer case of hubris and nemesis provided by the domination of Sparta. What a calamity this was for Greece and for Sparta herself is told by Grote in Chapter 72 of his history where he affirms "that the first years of the Spartan empire, which followed the victory of Aegispotami, were years of all-pervading tyranny and multifarious intestine calamity, such as Greece had never before endured. The hardships of war, severe in many ways, were now at an end, but they were replaced by a state of suffering not the less difficult to bear because it

[49] Dakyns, *The Works of Xenophon*, II, p. xxxii.
[50] *Loc. cit.*, I, p. 44.
[51] *Loc. cit.*, I, p. 75.

was called peace. And what made the suffering yet more intolerable was that it was a bitter disappointment and a flagrant violation of promises proclaimed repeatedly and explicitly by the Lacedaemonians themselves."[52] Here is the impression of Xenophon: "Abundant examples might be found, alike in Hellenic and in foreign history, to prove that the Divine powers mark what is done amiss, winking neither at impiety nor at the commission of unhallowed acts; but at present I confine myself to the facts before me. The Lacedaemonians, who had pledged themselves by oath to leave the states independent, had laid violent hands on the Acropolis of Thebes, and were eventually punished by the victims of that iniquity single-handed—the Lacedaemonians, be it noted, who had never before been mastered by living man; and not they alone, but those citizens of Thebes who introduced them into their Acropolis, and who wished to enslave their city to Lacedaemon, that they might play the tyrant themselves—how fared it with them? A bare score of the fugitives were sufficient to destroy their government."[53]

So the opportunity of another tyrant city seemed to have come. Thebes aspired as a matter of course to the hegemony of Greece, which meant dominion over tribute-paying states and control of their foreign policies. Finally, "where well-nigh the whole of Hellas was met together in one field, and the combatants stood rank against rank confronted, there was no one who doubted that, in the event of battle the conquerors this day would rule; and that those who lost would be their subjects."[54] The state that aimed at conquest always came offering liberty, and always ended by withholding it. No one expected anything else. Given the opportunity, ὕβρις seemed inevitable; and then followed ἄτη and νέμεσις. Through all this drama the great

[52] Grote, VII, p. 359.
[53] Dakyns, II, p. 119.
[54] *Loc. cit.*, II, p. 233.

individual is everywhere in evidence, the individual who, it is constantly remarked, hardly finds recognition in Greek political philosophy. The fascination of the seemingly self-sufficient man for the Greek imagination is clear enough. One of the theses of Eduard Meyer is that history develops and releases the individual. The certainty of pride, recklessness, and retribution on the part of the city as of the citizen, should the opportunity appear, is, perhaps, a reason not sufficiently acknowledged for the identification by the Greeks of ethics and politics.

On the whole, the confusion and disorganization of Greek political life are not likely to be exaggerated. Our information comes, for the most part, through writers of exceptional intelligence, whose sanity and humanity we mistakenly assume to be representative. We attribute their partiality for Spartan ways to their political grievances or party attachments. We forget that the great organ of equality, the printing-press, did not exist. Democracy without a printing-press, especially a direct democracy, speaking for itself and not through appointed representatives, was a very different system from anything that we are used to praise by calling it democracy. The political philosophy that should be written with a remedial purpose, as that of Plato and Aristotle clearly was, would naturally give us an "organic" theory of the state with an emphasis upon order and conservation, and a radical disparaging of what we prize as individuality. An examination in detail of this political philosophy would be superfluous. It is not its detail, but its general character that is of greatest interest here. No one would deny, I suppose, that Plato and Aristotle were writing for and about their own real world. Plato's vitriolic characterizations of democracy and his drastic scheme of social reform forbid us to regard his speculations as academic. As for Aristotle, surprise is often expressed that when the chapter of the city state was

already closed, he should be unable to imagine social organization in other and larger forms. Here too, however, we have an instance of using the indicative mode with the imperative intention. The old manner of life must be recovered, because that was evidently the way in which the Greeks had lived according to nature, their own nature. "Professional armies had superseded the city militia: Demosthenes is ceaselessly rebuking the Athenian's want of patriotism for Athens: civic virtue seemed to be dead. New life must be poured into the city: a 'revival' must begin, which should rejuvenate Greece. Athens had her reformers busy with this task at the time when Aristotle was writing the *Politics*; and his rehabilitation of the theory of the State went side by side with their attempts at a practical renovation of the old glories of Solon. It was natural that he should warn the Greeks of his time not to be carried away by false philosophies, nor to grow slack in their devotion to the city whereof they were citizens. That city was indispensable to their independence: it had grown up around them because it was. Fashionable philosophies might decry its claims; politics might be uninteresting and even sordid. None the less, the State, which had given all, claimed from every man the use of his best faculties in its cause: it could permit no man to retire into the solitude of a cynic's tub." [55]

Aristotle was, however, not improbably the victim of his own point of view. Whatever exists in the manner of nature, finds its form and stops. It can only disintegrate then, unless it can maintain itself at the point of complete development. Evidently, Athens had passed beyond the point of moderate democracy. Somewhere in the past, perhaps with the constitution of Solon or of Cleisthenes, Athens had found the "form" of a city and should have stopped there. In any case, the polis is a natural thing

[55] Barker, p. 273.

with its characteristic perfection, and for any natural thing the ways of missing perfection are infinite, but there is only one way of attaining it. Men have lived so long upon the earth, and most things have been long ago found out.

Another factor in what seems like radical conservatism is that very teleology that we so much admire. Socrates was accustomed to insist that politics was an art, because affairs could be kept under control only in specific and technical ways. In proportion as a thing is conceived as controllable, it is conceived as specific. The ἄπειρον is what is uncontrollable; it is πέρας, then, that must characterize the natural πόλις, if that particular growth is one to which man can adapt himself, and which, by the exercise of wisdom, he can control. The conservatism latent in the metaphor of a living organism is obvious, but this was what a long experience of disorder seemed to call for. The physiological analogy was what the somewhat indeterminate idea of φύσις was able to supply.

And here we have one of the most interesting and slippery words in the entire terminology of philosophy. The important thing about φύσις, however, is not where it originated, or what a Greek would have said it really meant, but how it was used. As is constantly pointed out, it was very often used in antithesis to νόμος, and whatever was an instance of νόμος was man-made, and the Greeks knew how transitory man-made things were. The sanction of νόμος might be the gods, or the ancestral tradition, but φύσις was the sanction of innovation. There is no need of denying that φύσις may have meant for the Ionians some primary form of matter. If it was taken over from physics to ethics (which, however, remains to be proved), it was at least taken over, and if one may apply to it Aristotle's own doctrine, we may say that it attained its own "form" in Aristotle's idea of the state as a natural and not an artificial

thing. If the *Politics* of Aristotle is a praise of φύσις, we may find the praise of νόμος in the lines of Sophocles quoted above, in the famous doctrine of Protagoras, and in the skepticism, so called, of Gorgias. I can do no more than raise the question whether the "real" meaning of these terms will not be found to reflect the discussions in which men were most interested from Hesiod to Aristotle. Only an expert in moral antiquities could answer the question. He would probably call our attention to the fact that it was in the era of Greek colonization that Man of Wisdom was almost synonymous with law-giver, and that colonization was a function of social discontent.[56]

In any account of the influences that were most effective in forming the moral imagination of the Greeks, an important place should be given to Greek tragedy, which was a formative influence because it was an expression of characteristic moral sentiment. Thoughtful tragedy shows the imagination in its most serious mood, preoccupied with the problems of sin and folly. On this general point, I venture one more quotation from Dr. Murray: "Most of the Homeric words of disapproval mean something like 'excess' or 'going too far', and imply that there are points where a man should check himself. The wicked are ἀτάσθαλοι 'outrageous', ὑπερηφανοι, 'overweening', ἄδικοι, 'away from Dike', justice or law: most of all wickedness is Ὕβρις. That word is the antithesis of σωφροσύνη and of αἰδώς, and like its antithesis it defies translation into our forms of thought. It unites so many ideas which we analyze and separate: and it has a peculiar emotional thrill in it, which is lost instantly if we attempt to make careful scientific definitions . . . Hubris is the insolence of irreverence: the brutality of strength. In one form it is a sin of the low and weak, irreverence; the absence of Aidôs in the presence of something higher. But nearly always it

[56] Plato, *Laws*, 736 A.

is a sin of the strong and proud. It is born of koros, or satiety—'of being too well off'; it spurns the weak and helpless out of its path, 'spurns,' as Aeschylus says, 'the great Altar of Dike' (*Ag.*, 383). And Hubris is the typical sin condemned of early Greece. Other sins, except some connected with definite religious taboos, and derived from words meaning 'ugly' or 'unfitting', seem nearly all to be forms or derivations of hubris."[57] In Hesiod and in Solon, the saving virtue is moderation; in the *Laws* of Plato and in the *Ethics* and *Politics* of Aristotle, the best conduct and the best institutions are a mean between two perversions. Plato's famous symbol for democracy, the mutinous crew,[58] was anticipated by Theognis: "Wherefore we are borne on now, having pulled down our white sails, from the Melian Sea through murky gloom: But they do not choose to bale the ship, and the sea surmounts both the vessel's sides, whereby with great difficulty any one saves himself: yet, the sailors are slumbering and have made the pilot, good though he was, cease from his work, the pilot who used to watch over it understandingly. By force they plunder property, order is upset, and no longer is there an equal distribution in common: but the porters bear rule and the mean are above the noble. I fear lest haply the waves should engulf the ship."[59] And this: "Cyrnus, this state is still a state indeed: but its people truly are other, who aforetime knew no rights nor laws, but were wont to wear out goat-skins about their sides, and to inhabit this city like stags, without the walls. And now, son of Polypas, they are noble: but they who were bettermost of yore are now of low degree: who can endure to look on these things?"[60] And this: "Insolence hath ruined both the Magnesians and Colophon and Smyrna, Cyrnus, it will

[57] *The Rise of the Greek Epic*, pp. 337–338.
[58] *Republic*, IV, p. 488.
[59] Bank's translation, Bohn Library, p. 255.
[60] *Loc. cit.*, p. 220.

certainly ruin us likewise." [61] And this: "No one of the present races of man doth the sun look down upon, being entirely good and moderate." [62] Euripides makes one of his characters tell how he would pause at nothing to win power; then his mother replies, explaining that nature gave man equality before the law, and measures of weight and number.

> The sightless face of night and the sun's beam
> Equally pace along their yearly round
> Nor envieth that it must give place.[63]

This passage and others have persuaded a German philologist that Euripides has versified "a political treatise which he would connect with the period and school of Antiphon. The motive of this treatise was a parallel between the order of the State and the order of the World, by which a State under the sovereignty of law was justified, and government was proved to rest with a middle class (consisting, apparently, of peasant farmers), similar to that which the revolution of 411 attempted to put into power." [64] This effort by Dümmler may seem a bit desperate, but the data for a dramatist were at hand. It was this same effort to equalize the claims of oligarchy and democracy that had the approval of Thucydides. "This government, during its early days, was the best which the Athenians ever enjoyed within my memory." And what Thucydides approved is probably what Aristotle recommended as the best means of preventing what Theognis called "The people-destroying seditions of the Greeks." [65]

To call attention to the wisdom and the permanent value of the social ethics that have come down to us under the names of Plato and Aristotle would be quite superfluous.

[61] *Loc. cit.*, p. 277.
[62] *Loc. cit.*, p. 252.
[63] *The Phoenician Maidens*, Way's translation, 543–545.
[64] Barker, *loc. cit.*, p. 25.
[65] *Loc. cit.*, p. 260.

If the world is about to try more unreservedly the experiment of democracy, the nations will surely need this ancient counsel of moderation. Can we trace this central idea to any early school? There is probably much justice in Burnet's conviction of the importance of the Pythagorean tradition among the influences to which Plato was exposed. There is a world of suggestion in the verb ἁρμόζω.

And finally, in this connection, the student of Greek achievement should bear in mind the theory of Boas,[66] that primitive human stocks do not differ in original endowment, but that what we call racial superiority is the result of the discipline exacted by nature and history. The genius of the city is the collective genius of its members, and the individual is, of course, trained in the school of responsibility and need. The authority of Boas here will not be disputed, though his opinion may be. Yet one who holds to the orthodox faith that the Greeks were a race somehow miraculously superior has no call to deny that the Greek genius owed much, no one can say how much, to a history of almost unremitting struggle to avert calamity.

The reader of this paper, having reached the end, is no doubt struck chiefly by the wholesale omission of topics that deserve discussion. One of these is the question: To what extent is Plato's theory of the ideal state, as he has sketched it in the *Republic*, a theory of social reform and social discipline, and to what extent is it a metaphor for individual morality? That it functions as a metaphor, Plato himself assures us. But Aristotle discusses the *Republic*, without any apologies, as a contribution to a theory of society. It may not be amiss to testify that when we hear the familiar laudation of our heritage from Greece, we may remember that one of its items of greatest value is precisely this realization that politics and ethics

[66] Franz Boas, *The Mind of Primitive Man*.

are aspects of a single subject-matter, and that sound and fruitful living begins when that is widely understood. And I shall indulge in one more quotation from Mr. Barker's excellent book (p. 185): "There is as little absolutely new in the *Politics* as there is in Magna Carta. Neither is meant to be new: both are meant to codify previous development. But Magna Carta remains the great document of English history; and the *Politics* remains the great document of Greek political thought—as Plato remains the great political thinker of Greece."

WENDELL T. BUSH

FRANCIS BACON AND THE HISTORY OF PHILOSOPHY

The first history of philosophy written in English which may lay claim to serious consideration was published in 1655 by Thomas Stanley, who is better known to the world as a Caroline poet and a classical scholar than as the author of *The History of Philosophy, containing the Lives, Opinions, Actions, and Discourses of the Philosophers of every Sect.* This work of Stanley is scarcely more than an attempt to take the third-century literary patch-work of fact and fable about the Schools, which has come down to us as the compilation of Diogenes Laërtius, amplify it, and supplement it by a series of translations.[1] Even before Stanley's time, however, there might have been written a history of philosophy which would not have been mere repetition of the old, if the brief directions of Francis Bacon regarding its composition had been seriously followed.

In his review of all the learning of his time and in his plan for its advancement, Bacon treated nearly every phase of human endeavor, and almost without exception, he suggested methods of procedure which outstripped his own and the next following century. His ability to get at the essential in the whole body of the arts and sciences is as remarkable as Shakespeare's ability to depict the whole of human nature; and in his writings there appear a catalogue of the vices of knowledge and a gallery of the virtues of learning as complete as his contemporary furnished in his plays for the frailties and perfections of human kind.

[1] The main additions are translations of Aristophanes's *Clouds*, Alcinous's *Doctrine of Plato*, Pico della Mirandola's *Platonic Discourse*, Reuchlin's *Explanation of the Doctrines of Pythagoras*, Sextus Empiricus's *Pyrrhonian Hypotyposes*, and a new treatment of Eastern philosophy which Stanley calls Chaldaic, Persean, and Sabaean Philosophy, and which treats in the main of the teachings of Zoroaster.

The writing of history and of one of its special branches —the history of philosophy—was considered at some length in Bacon's *Advancement of Learning*, and in his Latin translation and expansion of this work, the attention paid to these subjects was even more marked. In the former treatise Bacon expresses the wish that, in the interest of clarifying the understanding of the views of nature held in the past, "some collection be made painfully and understandingly *de antiquis philosophiis* out of all the possible light that remaineth to us of them." He continues:

> But here I must give warning that it be done distinctly and severedly; the philosophies of every one throughout by themselves, and not by titles packed and faggoted up together as hath been done by Plutarch. For it is the harmony of a philosophy in itself which giveth it light and credence; whereas if it be singled out and broken, it will seem more foreign and dissonant. For as when I read in Tacitus the actions of Nero or Claudius with circumstances of times, inducements, and occasions, I find them not so strange; but when I read them in Suetonius Tranquillus gathered into titles and bundles and not in order of time, they seem more monstrous and incredible. So it is of any philosophy reported entire, and dismembered by articles. Neither do I exclude opinions of later times to be likewise represented in this calendar of sects of philosophy, as that of Theophrastus Paracelsus, eloquently reduced into an harmony by the pen of Severinus the Dane; and that of Telesius and his scholar Donius, being as a pastoral philosophy, full of sense, but of no great depth; and that of Fracastorius, who, though he pretended not to make any new philosophy, yet did use the absoluteness of his own sense upon the old; and that of Gilbertus, our countryman, who revived with some alterations and demonstrations the opinions of Xenophanes.[2]

It is true that Bacon desired this history primarily as a record of beliefs regarding nature which were horrible examples of the result of using a method which was other than his own; but the fact remains that he gives us here an important clue to the method of writing the history of philosophy: *the history of each man's philosophy is to be*

[2] *Advancement of Learning*, II, 7:5; *cf. De Augmentis*, III, 4.

presented in its entirety, in its temporal development, and in its relation to its times.

We might give the same advice to those who to-day are anxious to make the past seem real by telling them to treat philosophy as something human, natural, as something really imbedded in an historical context and not to be understood apart from it. Excellent as this advice is, there is no denying that the historians of philosophy have seldom followed it. The question, Why haven't they? throws light not only upon the history of philosophy, but also upon the conception of philosophy. In general, those who have not followed Bacon's advice have considered philosophy to be a continuous series of approximations of a solution which must be single and absolute. With such a view, what could be more appropriate than the presentation of the history of philosophy under the headings of its most persistent problems? Such a system enables one to see in a kind of kinematographic fashion the flicker of opinion, and, if the cataloguer is at all an historical dramatist, an unfolding of the dialectic plot which will bring down the curtain with the destruction of the villain of the opposition and the glory and renown of the hero of the story. Perhaps there is no story. Then the tabulation becomes a Laërtian attempt to supply upon any point a variety of information supported by eminent authorities. From this the inquiring mind may make its selection for uses, one suspects, rather more appropriate for pedants or rarefied small talk than for the appreciation of human nature.

It is just this appreciation of human nature which is increased by the treatment of the history of philosophy as a succession of individual reflections called out and conditioned by historical situations. The appreciation is not an affair of sentimental, static sympathy. It is itself a spur to reflection, or, at least, it may be. The panorama of man in time, now searching in nature for the possibilities of

human excellence and constructing a scheme for the control of matter by intelligence, now building ideal structures as walls against which the breakers of adversity hurl themselves in vain, now spending whole centuries in servitude upon formulas long outworn, shocks the observer into a vigil of meditation upon his own generation, its limitations, its control of him, and its possibilities of control by him.

In the writing of the history of philosophy as a record of man thinking in his times, we are given further instruction by Bacon in his treatment of a missing branch of knowledge which he calls *Historia Literarum*. Dr. Flügel is quite right when he says that what is intended is not a history of literature.[3] Bacon means much more what we call the history of culture. The description given in *De Augmentis* may not be further compressed, and I quote it in full:

> Civil history, in general, may be divided into three particular kinds, *viz.*, sacred, civil, and literary; the latter appears like the statue of Polyphemus, without its eye; the part that best shows the life and spirit of the person. In many particular sciences, indeed, as the law, mathematics, and rhetoric, there are extant some short memoirs, and jejune relations of sects, schools, books, authors, and the successions of this kind of sciences, as well as some trivial accounts of the inventors of things and arts; but we say, that a just and universal literary history has not hitherto been published.
>
> The design of this work should be, to relate from the earliest accounts of time—(1) what particular kinds of learning and arts flourished, in what ages, and what parts of the world; (2) their antiquities, progress, and travels on the globe; (3) their decline, disappearance, and restoration. In each art should be observed: (4) its origin and occasion of invention; (5) the manner and form of its delivery; and (6) the means of its introduction, exercise, and establishment. Add to these (7) the most famous sects and controversies of learned men; (8) the calumnies they suffered, and the praises and honors they received; (9) all along let the best authors and books be noted; with (10) the schools, successions, academies, societies, colleges, orders, and whatever regards the state of learning; but (11) principally, let events be throughout

[3] Bacon's *Historia Literarum, Anglia*, Vol. 21, Halle, 1899.

coupled with their causes (which is the soul, as it were, of civil history), in relating the nature of countries and people; and (12) their disposition and indisposition to different kinds of learning; (13) the accidents of time, whether favorable or destructive to the sciences; (14) the zeal and mixture of religion; (15) the severity and lenity of laws; (16) the remarkable patronage, efforts, and endowments of illustrious men, for the promotion of learning and the like. All which we would have handled, not in the manner of critics, who barely praise and censure; but historically, or in the way of a naked delivery of facts, with but a sparing use of private judgment.

For in the manner of writing this history, we particularly advise the materials of it to be drawn, not only from histories and critical works, but also that the principal books of every century be regularly consulted downwards; so far we mean, as that taste may be had, or a judgment formed, of the subject, style, and method thereof; whence the literary genius of every age may at pleasure be raised, as it were, from the dead.

The use and end of this work is not to derive honor and pomp to learning, nor to gratify an eager curiosity and fondness of knowing and preserving whatever may relate thereto; but chiefly to make learned men wise, in the prudent and sober exercise and administration of learning, and by marking out the virtues and vices of intellectual things, as well as the motions and perturbations of states, to show how the best regulation and government may be thence derived. . .[4]

That this advice of 1623[5] and the spirit which occasioned it have not long been effective, needs no better proof than the extreme youth of anything approaching a history of culture. Bacon was always very proud of his modernity.

The main purpose of these notes has now been accomplished—the presentation of Bacon's conception of the history of philosophy and the effects which the serious following of his advice might be expected to have. There remain a few interesting minor points. Bacon's insistence upon a painstaking use of original documents, his appreciation of the usefulness of biographies and monographs, and his condemnation of bias in the writing of history, are visible in many sections of his writings, — less visible, un-

[4] *De Augmentis*, II, 4.

[5] In its general trend the description in *Advancement of Learning*, published in 1605, is practically the same.

fortunately, in his practise than in his theory. In his own attempts at the writing of history in the *History of the Reign of King Henry VII.* (1622), in the fragments of *Henry VIII.* (*c.* 1622), and in *The Beginnings of the History of Great Britain* (1609), Bacon falls short of the pattern which his writings on method disclose. It is quite probable that this fact, had he been aware of it, would have been the cause of regret, but it is unlikely that he would have prized himself much less highly because of it. Bacon did not fail to appreciate his own limitations in the practice of his maxims, but he did not chide himself over-much for them. In the preface for *De Interpretatione Naturae*, dated by Spedding 1603, he writes, "If any one call on me for *works*, and that presently; I tell him frankly, without any imposture at all, that for me—a man not old, of weak health, my hands full of civil business, entering without guide or light upon an argument of all others the most obscure—I hold it enough to have constructed the machine, though I may not succeed in setting it on work."

Of the main divisions which Bacon might have followed in writing the history of philosophy, we have some hint from the three divisions which he makes for general history. These are antique, middle, and modern. He writes: "It has pleased God to ordain and illustrate two exemplar states of the world for arms, learning, moral virtue, policy, and laws: the state of Grecia and the state of Rome; the histories whereof, occupying the middle part of time, have more ancient to them histories which may, by one common name, be termed the antiquities of the world; and after them histories which may be likewise called by the name of modern history."[6] The antiquities of the world are those portions of history for which only fragmentary sources remain. They end where Thucydides takes up the history of Greece, and Livy that of Rome. The middle part of

[6] *Advancement of Learning*, II, 2:6.

history, strangely unlike our own middle age, ends with Justinian, the "*ultimus Romanorum.*" Just what Bacon means to include by "modern" we find difficult to determine. He speaks of his own times as modern, and also, by a quaint figure, as "the old age of the world." His references to the history of the modern age are almost all to periods not more remote from his day than a hundred years, and there is no reference to a history, say, of the twelfth century, as a modern history. At first sight, it seems that we are forced to take our choice of two possibilities: Bacon may have considered all history after Justinian the period of the younger (modern) peoples; or he may have been so little interested in the times before 1500 that he quite left them out of account and made no place for them in his scheme.[7] Interest in the middle ages Bacon certainly did not have, and it is just possible that he forgot about them. It is more probable, however, that we need to revise our alternatives. It seems likely that the occasion for the treatment of the middle ages did not arise, and that we, in trying to find Bacon's classification of them, are looking for an answer to a question which he never asked.

It need hardly be pointed out that Bacon, in his treatment of the middle ages, and, for that matter, of the Greek and Roman thinkers, failed again to follow his own advice. He did, however, clearly relate his own new method to that effort we call "modern," that attempt to control nature in the interest of human welfare.

It would be possible to construct, from references to contemporaries and early thinkers which appear in his works, a history of philosophy as Bacon might have written it. The material for such a reconstruction has been systemati-

[7] In speaking of the contents of the history of philosophy, Bacon mentions the antique philosophy (Greek Colonial philosophy) and the "later" philosophers, and includes among the latter several of the Renaissance writers. We must not forget, of course, that Bacon is choosing his content in reference to opinions as to *nature*, and in consequence would be apt to omit the medieval philosophers.

cally arranged by Dr. Wolff [8] in his exhaustive study of Bacon's sources. Such an effort is quite aside from our purpose, however, which is amply served if the humanness of the history of philosophy and its meaning for the present have been even slightly illuminated through this reference to a humanist of the sixteenth century.

JOHN J. COSS.

[8] Emil Wolff, *Francis Bacon und seine Quellen*: Erster Band, *Bacon und die griechische Philosophie*, Berlin, 1910; Zweiter Band, *Griechische Authoren und römische Dichter*, Berlin, 1913.

THE MOTIVATION OF HOBBES'S POLITICAL PHILOSOPHY

It is the object of this essay to place the political philosophy of Hobbes in its own historic context. The history of thought is peculiarly exposed to an illusion of perspective. Earlier doctrines are always getting shoved, as it were, nearer our own day. We are familiar with the intellectual struggles of our own time and are interested in them. It is accordingly natural to envisage earlier thought as part of the same movement or as its forerunner. We then forget that that earlier period had its own specific problems, and we proceed to assimilate its discussions to our present interest. Hobbes has been especially subject to this temporal displacement. For over a century the chief question in social philosophy has centered about the conflict between individual freedom and public and institutional control. The central position of the theory of sovereignty in Hobbes's thought has made it easy to translate his political philosophy into terms of this debate; the issue which was really acute in his day—the conflict of church and state—now lacks actuality for English and American writers at least.

I

To prove this statement as to the central issue of Hobbes's day would require more than the space allotted to this paper. In general, I can only refer to the voluminous political discussions of the seventeenth century and to the overt history of England during the time of the civil wars. Specifically, let me note the admirable studies of Mr. Figgis.[1] They are enough to relieve my statement from

[1] *The Divine Right of Kings* and *From Gerson to Grotius.*

any charge of exaggeration. Some quotations from Mr. Figgis will, then, be used to introduce the discussion. He points out that the controversy regarding the divine right of kings belongs to a day when politics, by common consent, was a branch of theology, and goes on to say, "All men demanded some form of divine authority for any theory of government . . . Until the close of the seventeenth century, the atmosphere of the supporters of popular rights is as theological as that of the upholders of the Divine Right of Kings."[2] And again, "There is no more universal characteristic of the political thought of the seventeenth century than the notion of non-resistance to authority. 'To bring the people to obedience' is the object of writers of all schools. When resistance is preached, it is resistance to some authority regarded as subordinate. Nor is the resistance permitted at the pleasure or judgment of private individuals. It is allowed only as a form of obedience, as executing the commands of some superior and ultimate authority, God, or the Pope, and the Law."[3]

In other words, everybody worked upon an assumption of a supreme authority, of law as command by this authority, and duty as ultimately obedience. Not these conceptions, but rather the special content given them, mark off Hobbes. There was, of course, a party which opposed such centralization as Hobbes argued for, but the opposition was not in the the name of the individual, but of something very different, the People.

So far as I can discover, the term people still had its meaning fixed by the traditional significance of *Populus*—a meaning very different from that of *plebs* or the French *peuple*. This notion, as defined, say, by Cicero, was a com-

[2] *Divine Right of Kings*, p. 11.

[3] *Op. cit.*, p. 221. Technically, discussions centered about the nature of *Jus*. The ambiguity of Jus, meaning both command and law on one side, and right, on the other side, has been frequently noted. At this time, it was not so much ambiguity which existed as two sides of one notion. Jus is primarily *authority*, and secondarily *authorization*, depending, of course, upon authority.

monplace among the "civilians" and those trained in scholastic philosophy. In Cicero's words, the people is "not every gathering of men, assembled in any way whatsoever, but is the multitude associated by a common sense of justice and by a common interest." It is a *universitas*, not a *societas*, much less a mere aggregate of individuals. And the appeal of the upholders of popular against royal government was to the *authority* of this organized body, of which the Commons was frequently (but not always) taken to be the representative. The following words from Lawson, taken from *An Examination of the Political Part of Mr. Hobbes, his Leviathan* (1657) are worth quoting: "The liberty which the English have challenged and obtained with so much expense of blood is . . . that which is due unto us by the constitution of the State, Magna Charta, the Laws, and the Petition of Right. It is but the liberty of subjects, not sovereigns; when he hath said all he can, we are not willing to be slaves or subject ourselves to Kings as Absolute Lords. . . . By liberty Aristotle meant such a privilege as every subject might have in a free state . . . . where it is to be noted that one and the same person who is a subject, and at the best but a Magistrate, hath a share in the sovereign power. Yet this he hath not as a single person, but as one person jointly with the whole body or major part at least of the people" (pp. 67–68). This correlativity of three things: the people, a society organized through laws and especially through the fundamental law, or constitution, and liberty is in marked opposition to Locke's conceptions of a natural right or authority found in the individual himself. It is not, I think, paradoxical to say that Locke derived this conception of a natural right belonging to the individual as such from Hobbes rather than from Hobbes's popular opponents.

It is noteworthy that Cumberland, the chief systematic opponent of Hobbes on rationalistic grounds, objects to the

latter's political philosophy because "Hobbes's principles overthrow the Foundations of all Government;"—they would not suffer any man to enter into civil society; they excite subjects to rebellion. In short, it is Hobbes's psychological and moral individualism rather than his theory of sovereignty to which objection is taken. The same is true of a much less effective writer, Tenison, in his *Creed of Mr. Hobbes Examined* (1670). He says that since Hobbes identifies the law of nature with the counsels of self-interest "the Fundamentals of your Policy are hay and stubble, and apter to set all things into blaze than to support government" (p. 156); and again, "Woe to all the Princes on earth, if this doctrine be true and becometh popular; if the multitude believe this, the Prince . . . can never be safe from the spears and barbed irons which their ambition and presumed interest will provide." Hobbes's principles, in their appeal to self-interest, are but "seeds of sedition" (pp. 170–171). That Hobbes himself was aware that, as matter of fact, a government is not likely to retain enough strength to secure obedience unless it has regard to the common weal, will appear in the sequel—though naturally he never made this moral explicit.

Let us hear from Mr. Figgis again. "It is true that with the possible exception of Hobbes, all the political theorists up to the end of the seventeenth century either have religion as the basis of their system, or regard the defense or supremacy of some form of faith as their main object."[4] Now Hobbes is precisely the exception which proves the rule. He is theological in motive and context in the sense that he is deliberately anti-theological. Along with his exclusive self-interest doctrine, it was his theory of a secular basis for sovereignty, not the doctrine of a supreme authority, which brought him into disrepute.[5] His familiar title was atheist,

[4] *Op. cit.*, p. 219.

[5] See, for example, the quotations from royalist writers, Falkner and Filmer, in Figgis, *Op. cit.*, pp. 388–389.

so that even the royalists who might be supposed, on purely political grounds to welcome his support, found it necessary to disclaim him. Compare the following from a contemporary letter: "All honest men who are lovers of monarchy, are very glad that the King hath at last banisht his court that father of atheists Mr. Hobbes, who it is said hath rendered all the queen's court, and very many of the Duke of York's family, atheists."[6] In the apologetic dedication of his *Seven Philosophical Problems* to the King after the Restoration in 1662, Hobbes in defending himself against this charge says of his Leviathan, "There is nothing in it against episcopacy. I can not therefore imagine what reason any episcopal man can have to speak of me, as I hear some of them do, as of an atheist or man of no religion, *unless it be for making the authority of the church depend wholly upon the regal power.*" In the words which I have italicized Hobbes flaunts his ground of offense.

II

Postponing, for the moment, the important point in Hobbes, his attempt to secularize morals and politics, I take up his own sayings regarding the immediate occasion of his political writings. Croom Robertson and Toennies have made it clear that the first of his writings[7] dates from 1640 and is substantially what we have in his *Human Nature* and *De Corpore Politico*. In his *Considerations upon the Reputation of T. Hobbes* (1662) Hobbes says this little treatise "did set forth and demonstrate that the said power and rights were inseparably annexed to the sovereignty," and that the treatise was so much talked of, although it was not printed, that if the King had not dissolved Parliament, it

[6] Quoted by Toennies in *Archiv fuer Geschichte der Philosophie*, 1890, p. 223.

[7] Now published (from mss.) by Toennies under the title of *The Elements of Law Natural and Politic*, London, 1889.

would have brought him into danger of his life.[8] There is here, indeed, no reference to just what the points were in the quarrel about the regal power, but his Behemoth or the Long Parliament leaves no doubt. There he says that the Parliament of 1640 "desired the whole and absolute sovereignty. . . . For this was the design of the Presbyterian ministers, who taking themselves to be, by divine right, the only lawful governors of the Church, endeavored to bring the same form of government into the civil state. And as the spiritual laws were to be made by their synods, so the civil laws should be made by the House of Commons."[9] And at the beginning of this work, in stating the causes of the corruption of the people which made the civil wars possible, he puts first the Presbyterians, second the Papists, and third the Independents.[10]

In the Considerations already referred to he says he "wrote and published his book *De Cive*, to the end that all nations which should hear what you and your Con-Coventanters were doing in England, might detest you." Not less significant is his letter, from Paris, in 1641 to the Earl of Devonshire. He says, "I am of the opinion that ministers ought to minister rather than govern; at least, that all Church government depends on the state, and authority of the kingdom, without which there can be no unity in the church. Your lordship may think this but a Fancy of Philosophy, but I am sure that Experience teacheth thus much, that the dispute for (the word is variously read preference and precedence) between the spiritual and civil power, has of late more than any other thing in the world been the cause of civil war."[11] Of the *Leviathan*, he says: "The cause of my writing that book was the consideration of what the ministers before, and in the beginning of the

[8] Molesworth, *Works*, E. IV, p. 414.
[9] I quote from Toennies's edition, p. 75. See also pp. 63, 57, 49, 95, 172, *etc.*
[10] *Ibid.*, pp. 2–3.
[11] Quoted by Toennies, in *Archiv*, Vol. 17, p. 302. See also *Works* IV, p. 407.

civil war, by their preaching and writing did contribute thereunto."[12] And it may be worth noting that considerably over one-half of the Leviathan is explicitly devoted to the bearing of religious and scriptural matters upon politics as they touch upon the relation of church and the civil power.

In his controversy with "the egregious professors of the mathematics in the University of Oxford" he remarks of the *De Cive*: "You know that the doctrine therein taught is generally received by all but the clergy, who think their interest concerned in being made subordinate to the civil power."[13] Again he expresses his surprise that some even of the episcopal clergy have attacked him, and thinks it can be explained only as a "relic still remaining of popish ambition, lurking in that seditious division and distinction between the power spiritual and civil."[14] Most significant of all, perhaps, are his remarks in the Preface of the *Philosophical Rudiments*, where after saying that he does not "dispute the position of divines, except in those points which strip subjects of their obedience, and shake the foundations of civil government," he goes on to say, "These things I found most bitterly excepted against: That I made the civil powers too large, but this by ecclesiastical persons. That I had utterly taken away liberty of conscience, but this by sectaries. That I had set the princes above the laws, but this by lawyers."[15] In no enumeration of the criticisms brought against his teachings does he mention the principle of absolute sovereignty, nor does he set his doctrine of sovereignty in antithesis to any doctrine except that of divided sovereignty—divided, that is, between the spiritual and temporal power. Locke's doctrine of a sovereignty limited by prior natural rights of those who were its subjects

[12] Vol. VII, p. 335.
[13] Molesworth, Vol. E. VII, p. 333.
[14] *Ibid.*, Vol. IV, p. 429.
[15] *Ibid.*, Vol. II, pp. xxii–xxiii.

had neither provocation nor justification till after the revolution of 1688 called for some theoretical explanation.

One can hardly, of course, accept Hobbes as an unbiased witness to the way in which his doctrine was received. But Eachard's *Mr. Hobbes's State of Nature Considered* (1696) (a genuinely witty work) gives corroborative evidence that it was not the doctrine of sovereignty which aroused dissent, for he repeatedly states that that was old matter dressed in new form. "Your book called Dominion chiefly consists of such things as have been said these thousands of years." And again, "it might easily be shown how all the rest (so much as is true) is the very same with the old plain Dunstable stuff which commonly occurs in those who treated of Policy and Morality." Aside from the aspersion on human nature contained in Hobbes's doctrine of self-interest, what Eachard objects to is Hobbes's "affected garbs of speech, starched mathematical method, counterfeit appearances of novelty and singularity."[16] How habitually the ideas of the evils of divided sovereignty were in Hobbes's mind appears from a note in the *Rudiments:* "There are certain doctrines wherewith subjects being tainted, they verily believe that obedience may be refused to the city, and that by right they may, nay, ought, to oppose and fight against chief princes and dignitaries. Such are those which, whether directly and openly, or more obscurely and by consequence, require obedience to be given to others besides them to whom the supreme authority is committed. I deny not that, but this reflects on that power which many, living under other government, ascribe to the chief head of the Church of Rome, and also on that which elsewhere, out of that Church, bishops require in theirs to

[16] Harrington, on the contrary, who was a genuinely democratic writer with an interest which was modern, economic, and secular, in differing radically from Hobbes as to respective merits of royal and popular government, says, "in most other things I believe Mr. Hobbes is, and in future ages will be, accounted the best writer in this day in the world."

be given to them; and last of all, on that liberty which the lower sort of citizens, under pretence of religion, do challenge to themselves. For what civil war was there ever in the Christian world, which did not either grow from, or was nourished by this root?"[17]

As an *argumentum ad hominem* in his own time, it is impossible to overestimate the force of his argument. All Protestants united in declaiming against the claim of the Roman Church to interfere in matters temporal. Yet some of the episcopalian bishops declared that in matters of religious actions, such as rites, appointments, preferments, the Church represented God, not man, and had a superior right to obedience. The Presbyterians in general were committed to a dual theory of authority and obedience. Yet all of these ecclesiastical institutions united in reprimanding the fifth monarchy men, Anabaptists, Levelers, *etc.*, who claimed that their personal conscience as enlightened by the indwelling presence of the Holy Spirit was the ultimate source of knowledge of divine law, and hence the rule for obedience. Luther, Calvin, English bishop, and Scotch presbyter alike attacked this doctrine as anarchic and immoral. Hobbes, in effect, points out that all churches are in the same anarchic class, for they all appeal to something other than publicly instituted and proclaimed law.

In connection with the sectaries, it is interesting to note that they expressly cried out for "natural rights derived from Adam and right reason." According to this view, "all men are by nature the sons of Adam, and from him have derived a natural propriety (property), right, and freedom. . . . By natural birth all men are equally free and alike born to like propriety, liberty, and freedom; and as we are delivered of God by the hand of nature into this world, every one with a natural innate freedom and propriety, even so we are to live, every one equally and alike, to enjoy

[17] Vol. II, p. 79, note.

his birthright and privilege."[18] That this anarchic doctrine of the Levelers was wrought by Locke into a stable foundation for a reasonably conservative Whig doctrine, testifies to his altered background and outlook. There is no evidence that Hobbes was influenced by the doctrine, but it is more than a coincidence that he makes a precisely similar notion of natural rights the origin of the war of all upon all, and the basis of demand for absolute sovereignty. If he had this notion in mind in his picture of the state of nature, it adds a piquant irony to his sketch, as well as to his repeated assertions that there was no difference of principle between the sectaries' appeal to the court of private judgment and the doctrines of Papist, Presbyterian, and of such Episcopalians as did not recognize that the authority of the Established Church was by grace of the political sovereign and not by divine right.

Lawson was one of the better tempered and more moderate opponents of royal sovereignty, an episcopalian rector with obvious sympathies with Cromwell. He admits as a "certain truth" that sovereignty is above all civil law, but asserts the supreme legislator "is subject to the superior will of God"—which, of course, was Hobbes's own doctrine. "All the sovereignty's power of making laws, judgments, *etc.*, are from God. . . . Men may give their consent that such a man or such a company of men shall reign, but the power is from God, not them." From this doctrine, it is not a long step to his statement that the true believer in God "may, must within himself, even of laws, so far as they are a rule, and bind him, enquire, examine, and determine whether they are good or evil. Otherwise, he can perform only a blind obedience even to the best; and if he conform unto the unjust, he in obeying man disobeys God, which no good man will do. Romans, xii, 14-15." Subsequently

[18] Quoted from Ritchie, *Natural Rights*, p. 9. He quotes from the preface of Firth to the *Clarke Papers*.

he adds, "Nor does this doctrine anyways prejudice the civil power, nor encourage any man to disobedience and violation of the civil laws, if they be just and good as they ought to be; and the subject hath not only liberty, but a command to examine the laws of his sovereign, and judge within himself and for himself, whether they be not contrary to the laws of God."[19] Yet Lawson joins in the common animadversions upon the leveling sectaries. Moreover, Lawson deplores the disorder and divisions of the time. "Our form of government is confounded by the different opinions of common lawyers, civilians, and divines who agree neither with one another, nor amongst themselves." Nor can the history of England be appealed to as an umpire—as many were doing, for as Lawson, clearer-headed than most, perceived, it shows "only as matter of fact how sometimes the King, Counties, and Barons, sometimes the Commons were predominant and ascendant." And he concludes, "yet for all this, a free parliament of just, wise, and good men might rectify all this, and *unite the supreme power so miserably divided to the hazard of the state.*"[20] In a situation where a writer sees that the great need is for a unified authority or sovereignty, and yet argues in support of that very principle of private judging of laws which had been a large factor in bringing about the situation he deplores, Hobbes's case almost states itself.

III

A few words are now to be said about another motif in Hobbes's ardent assertion of a unified sovereignty. The part of his doctrine which was not directed against the claim of the Churches to obedience was aimed at the claim of the

[19] *Op. cit.*, pp. 96, 123, 127. When one considers the prevalence of this idea of the duty of private judgment, one is almost inclined to align Hobbes's criticism of it with that passed by August Comte upon Protestantism.

[20] *Ibid.*, pp. 133–134. Italics mine.

authority of Law set up by the lawyers. To go fully into this matter would require a summary of certain phases of parliamentary history in England, beginning in the time of Elizabeth and becoming highly acute in the reign of James. On the one side were the lawyers and judges, and on the other were the claims of the legislature representing statute law, and of the Chancellor representing equity. The king then largely dominated parliament, and this made the party of the judges against parliament essentially the popular party of later controversy. In the earlier words of Aristotle, and the later words of the Constitution of Massachusetts, they proclaimed a government "which was a government of laws, not of men."[21]

Consider, for example, such a statement as this of John Milton, arguing against Salmasius: "Power was therefore given to a king by the people, that he might see by the authority committed to him that nothing be done against law, and that he keep our laws and not impose upon us his own. Therefore, there is no regal power but in the courts of the kingdom and by them." And Harrington's constant contention is that only a commonwealth is a government of laws, since law must proceed from will, and will be moved by interest; and only in a commonwealth is the whole will and the whole interest expressed. In a monarchy or oligarchy, the laws are made in the interest of a few, so that what exists is a government of men. Harrington, however, is an innovator in connecting law with legislation rather than with the courts. "Your lawyers, advising you to fit your governments to their laws, are no more to be regarded than your tailor if he should desire you to fit your

[21] As Hobbes saw, this doctrine is either a negation of sovereignty or works out practically (as it has done so largely in this country) in placing the judges in the seat of sovereignty—a "government of lawyers, not of men," to paraphrase the old saying. Locke comes close to this legal position, and historically is half way between Hobbes's location of sovereignty and Rousseau's ascription of sovereignty to the legislative body alone.

body to his doublet"—another point of sympathy between him and Hobbes.

It was lawyer's law then which was usually meant—the law of courts, not of legislation. As Figgis says, speaking of the reliance of the popular party upon government by law, "Nor is it of statute law that men are thinking; but of the common law . . . which possesses that mysterious sanctity of prescription which no legislator can bestow. The common law is pictured invested with a halo of dignity, peculiar to the embodiment of deepest principles and to the highest expression of human reason and of the law of nature implanted by God in the heart of man. As yet men are not clear that an Act of Parliament can do more than declare the common law."[22] It is with this doctrine in mind that Hobbes is so insistent that the sovereign is absolved from all law save the moral law—which, as we shall see later, is for him the law of an enlightened hedonism. But Hobbes is not just begging the question. Bacon before him had pointed out many of the defects of common law and the need of codification and systematized revision. The demand for legislative activity was constantly increasing; the Long Parliament in effect restated the common law. Courts of equity had been obliged to assume an extensive activity, and it is not unimportant that the Chancellor's court was essentially a royal court and followed the law "of reason," the law "of nature," the law of conscience and of God. Hobbes's essential rationalism was shocked at calling anything law which expressed, as did the common law, merely custom and precedent.[23]

Hobbes does away at one sweep with any alleged distinction between written and unwritten law. All law is written, for written *means* published. And as published, it

[22] Figgis, *Op. cit.*, p. 229. See his note for references in support of the text.
[23] See Vol. III, p. 91.

proceeds only from him (or them) who has authority—power to require obedience. And that, of course, is the sovereign. "Custom of itself maketh no laws. Nevertheless, when a sentence has once been given, by them that judge by their natural reason, . . . it may attain to the vigor of a law . . . because the sovereign power is supposed tacitly to have approved such sentence for right. . . . In like manner those laws that go under the title of *responsa prudentum*, the opinions of lawyers, are not, therefore, laws because *responsa prudentum*, but because they are admitted by the sovereign."[24]

But Hobbes is most explicit in a work, too infrequently made use of by historians of philosophy, entitled *A Dialogue between a Philosopher and a Student of the Common Law of England*.[25] This dialogue opens with an attempt to prove that it is the king's reason which is the soul even of the common law. He quotes Coke's saying (and it is to be recalled that Coke had been on the lawyers' side against King James) that law is reason, although an artificial reason, got by long study and observation; such a perfection of reason, however, that "if all the reason that is dispersed into so many several heads were united into one, yet could he not make such a law as the law of England is, because by many successions of ages it hath been fined and refined by an infinite number of grave and learned men." As against this view, Hobbes inserts his usual caveat; it was not the succession of lawyers or judges that made the law, but the succession of kings who created the judges and who enforced the decisions. "The king's reason, when it is publicly upon advice and deliberation declared, is that *anima legis*, and that *summa ratio*, and that equity . . . which is all that is the law of England." And even more emphatically: "There is not amongst men a universal

[24] *Works*, Vol. E. IV, p. 227. See also VI, pp. 194–195.
[25] Molesworth, Vol. E. VI.

reason agreed upon in any nation, besides the reason of him that hath the sovereign power. Yet though his reason be but the reason of one man, yet it is set up to supply the place of that universal reason which is expounded to us by our Saviour in the Gospel; and consequently our King is to us the legislator both of statute law and of common law."[26] Later he suggests that common law and its lawyers are the chief source of excessive litigation "on account of the variety and repugnancy of judgments of common law," and because "lawyers seek not for their judgments in their own breasts, but in the precedents of former judgments," and also in the liberty they have to scan verbal technicalities.[27] Still later his aversion to reference to mere custom and precedent becomes more marked, and he even goes so far as to say that all courts are courts of equity in principle if not in name[28]—than which it would be hard to find a doctrine more obnoxious to lawyers: — all of which throws light upon the opening sentence of his book, that the study of law is less rational than the study of mathematics, and possibly suggests a slight irony in his reference to the reason of kings as the source of the supreme rationality of common law claimed for it by such a writer as Coke.

IV

When I first became aware of these specific empirical sources for Hobbes's political philosophy, I was inclined to suppose that he had made the latter a necessary part of a deductive system from that inordinate love of formal system to which philosophers are given. And the closing words of the *Leviathan* seem to bear out the impression,

[26] Vol. VI, pp. 14 and 22. In the *Leviathan* (Vol. III, p. 256), he criticizes this definition of Coke's on the ground that long study only increases error unless the foundations are true and agreed upon.

[27] *Ibid*, p. 45.

[28] *Ibid.*, p. 63.

when, as if in a relieved tone, he says that having brought to an end his discourse on Civil and Ecclesiastical Government "occasioned by the disorders of the present time," he is now free to "return to my interrupted speculation of bodies natural." Croom Robertson, no mean judge where Hobbes is in question, says "the whole of his political doctrine . . . has little appearance of having been thought out from the fundamental principles of his philosophy. Though connected with an express doctrine of human nature, it doubtless had its main lines fixed when he was still an observer of men and nature, and not yet a mechanical philosopher. In other words, his political theory is explicable mainly from his personal disposition, timorous and worldly, out of sympathy with all the aspirations of his time."[29]

Further study led me, however, to a different position, to the position that Hobbes was satisfied that (even if his ideas had arisen in his own experience) he had given them a strict scientific or rational form. And while this point is of no great importance as merely an item in Hobbes's biography, it is, I think, of fundamental importance in the theme that Hobbes's great work was in freeing, once for all, morals and politics from subservience to divinity and making them a branch of natural science. So I offer no apology for setting forth the evidence that Hobbes himself believed in the scientific status of his politics.

As a point of departure, take the following passage from the preface to his *Rudiments* (the original *De Cive*). "I was studying philosophy for my mind's sake and I had gathered together its first elements in all kinds, and having digested them into three sections by degrees, I had thought to have written them, so as in the first I would have treated of body . . . ; in the second of man . . . . ; in the third of civil government and the duties of subjects. . . .

[29] Hobbes, London, 1886, p. 57.

It so happened in the interim, that my country, some few years before the civil war did rage, was boiling hot with questions regarding the rights of dominion and the obedience due from subjects; and was the cause which, all those other matters deferred, ripened and plucked from me this third part."[30] And in a letter written in 1646 to Mersenne, speaking of his delay in completing his first part, namely, that on Body, he says that laziness is in part the cause, but chiefly because he has not yet been able to satisfy himself in the parts relating to the senses, and adds, "for that which I hope I have done in moral doctrine, that I am anxious to do in First Philosophy and in Physics."[31]

More specifically we have the claims he puts forth for his *De Cive* (claims which he continued to put forth even after he was aware that they exposed him to the accusation of actuation by egregious vanity), that it was the first treatise to put morals and politics on a scientific basis. Molesworth quotes from an unpublished manuscript on *Optics* the following concluding paragraph. "If it be found to be true doctrine, I shall deserve the reputation of having been the first to lay the grounds of two sciences: this of *Optiques*, the most curious, and the other of natural justice, which I have done in my books *De Cive*, the most profitable of all other." In the epistle dedicatory to his *Elements of Philosophy*, in which he executed his plan to give a systematic treatment of his entire philosophy, he says that geometrical science dates from antiquity; natural philosophy from Galileo, while "civil philosophy is much younger, being no older (I say it provoked, and that my detractors may know how little they have wrought upon me) than my own book *De Cive*."[32]

[30] Vol. II, pp. xix–xx. See also xxii, in which he says that there is only one point not *demonstrated* in the whole book—namely, the superior commodiousness of monarchy; for, as we must remember, Hobbes always means mathematical method by demonstration.

[31] *Archiv., Op. cit.*, p. 69.

[32] Vol. I, p. ix.

The matter becomes one of more than biographical importance when we recall Hobbes's conception of science or demonstrative knowledge and the importance attached by him to science. Science is reasoning from cause to effect, and hence universal and certain, while empirical knowledge, or prudence, reasons from effect to cause, and is but probable and hypothetical. The end or object of science is power, control, for if we know the generation or cause of things, we have it in our power to determine them. The question of the scientific character of morals and politics is, then, a question of the possibility of enduring social security and safety—"peace." Unless men attained to first principles from which any one could proceed, as by mathematical reasoning, to determinate conclusions, politics would remain still a matter of opinion, uncertainty, controversy, in short, of war. It is in this light that we have to understand his assertion that geometry, physics, and morals form one science, as the "British, the Atlantic, and the Indian seas . . . do altogether make up the ocean."[33] Strictly speaking, moreover, *natural* philosophy can not be a science, for in it we must, perforce, reason from effects to causes, and thus arrive only at what "may be." "The science of every subject is derived from a precognition of the causes, generation, and construction of the same; and consequently where the causes are known, there is place for demonstration. . . . Geometry, therefore, is demonstrable, for the lines and figures from which we reason are drawn and described by ourselves; and civil philosophy is demonstrable, because we make the commonwealth ourselves."[34]

Moreover, the situation of the times made Hobbes's belief, whether it were rightly grounded or not, of more than

[33] Vol. II., p. iv.

[34] VII, p. 184. I think that there is more than a shadowy reminiscence of Hobbes in Locke's contention that morals and mathematics are the two demonstrative subjects. What we "make ourselves" and general notions which, being the "workmanship of the understanding," are their own archetypes, are not, after all, far apart.

academic import. We have already seen the extent to which private and variable opinion was to him the source of the ills from which the state suffered. Scientific demonstration is the sole alternative to the continuation of the troubled regime of opinion. Hobbes is in the somewhat paradoxical opinion of holding that while all order proceeds from the unquestioned authority of the sovereign, the permanent and settled institution of sovereignty itself depends upon a recognition of the scientific truths of morals and politics as set forth by him. While his controversies with Wallis and Ward doubtless gave asperity to his attacks on the universities, there is no questioning the fact that they were sincerely actuated by the belief that the doctrines of morals and politics therein taught were largely responsible for the evils of the time. They are to England as the Wooden Horse to Troy; the core of rebellions; the source of opinions contrary to the peace of mankind; the shops and operatories of the clergy; the fountains of civil and moral doctrine.[35] Hobbes was equally sincere in believing that the new science of morals and politics ought to be taught in the universities, and that such inculcation was a precondition of lasting social security.[36] If this nation was "very lately an anarchy and a dissolute multitude of men, doing every one what his own reason or imprinted light suggested,"[37] a considerable part of the remedy is to be found in the control, in the future, of instruction by the civil authority. "Because opinions, which are gotten by education and in length of time are made habitual, can not be taken away by force and upon the sudden; they must, therefore, be taken away also by time and education." And then he goes on, as usual, to charge the universities with having been the corrupters of opinion, and to

[35] VI, p. 213; VI, p. 236; III, p. 330; VII, p. 345; III, p. 713. See also IV., p. 204.

[36] III, p. 713 for his suggestion to Cromwell to have his doctrines taught in the universities; see VII, pp. 343–352 for a defence of the proposal.

[37] IV, p. 287.

add that if the true doctrine of a body politic and of law were taught to young men "whose minds are as white paper," they would teach it to the people even more sedulously than false doctrine is now taught.[38] It is in this context, then, that we have to take Hobbes's famous contention that the practical utility of moral science is to be found more in what men have suffered from its absence than in what they have gained by its presence, and his contention that he is the first in morals to "reduce the doctrine to the rules and infallibility of reason."[39]

V

Such are some of the grounds for thinking that the final importance of Hobbes's political philosophy is found in its attempt to make the subject secular and scientific. Not merely in external matters was he motivated by the conflict of civil and ecclesiastic power, but even more in intellectual aim and method. We fail to get the full force of Hobbes's conception of sovereignty until we see that to Hobbes the logical alternative is setting up the private opinions of individuals and groups of individuals as the rule of public acts—a method whose logical inconsistency has division and war for its practical counterpart.

There exists, indeed, a paradox in Hobbes. On one hand, we have the doctrine of the sovereign's arbitrary institution of duties, and rights and wrong. On the other, we have his doctrine of the strictly scientific character of morals and politics. In view of the seeming contradiction it is little wonder that his opponents—notably Cudworth and his school—passed over the latter strain and assumed that the whole content of Hobbes consisted in an assertion of the

[38] Vol. IV., p. 219.

[39] In his dedication to the Earl of Newcastle, dated in 1640, where men's agreement in mathematics, due to dependence on reason, is contrasted with their controversies and contradictions in policy and justice, due to their following passion.

purely arbitrary character of all moral distinctions. Nevertheless Cudworth's view is thoroughly one-sided. Cumberland, not Cudworth, was Hobbes's most intelligent opponent, and in his *De Legibus Naturae* we find an attempt to meet Hobbes on his own ground in a way which reveals the positive influence of Hobbes's conception of morals as a branch of natural science. In speaking of the natural light and innate ideas of the Platonizers, he remarks scornfully, "I have not been so happy as to learn the laws of nature in so short a way." He argues for an order of logical precedence in moral laws from the analogy of the laws of motion in natural science. He expressly points out that other writers, in reasoning from approved sentiments and the common consent of mankind (*e. g.*, Grotius and his followers), had reasoned from effects to causes only, and in his search for laws of nature commits himself to the essentially Hobbesian conception that they are "the foundations of all moral and civil knowledge" in such a way as to compel the use of a deductive method. He differs radically as to substance of the fundamental axioms, but agrees as to the form of morals as a science. He "abstains" from theological matters, because he will prove the laws of nature only from reason and experience. He believes that "the foundations of piety and moral philosophy are not shaken, but strengthened by Mathematics and the Natural Philosophy" that depends thereon. In making benevolence, or regard for the happiness of all, his fundamental principle, instead of egoistic regard for private happiness, the influence of Hobbes may be seen in the fact that he, too, starts from Power, but argues that the effective power of man in willing his own happiness is limited to willing it *along with* the happiness of others. And since Hobbes had held that the desire for purely personal good contradicts itself when acted upon, the transformation upon the basis of Power of Hobbes's axiom of self-love into one of benevolence was not difficult.

VI

I do not mean, however, that Hobbes is free from the paradox mentioned. On the contrary, his position is precisely the paradox of attempting to derive by mathematical reasoning the authority of the sovereign to settle arbitrarily all matters of right and wrong, justice and injury, from rational, universal axioms regarding the nature of good and evil. His method of dealing with the paradox takes us to the meaning given by him to natural law, and to his conception of the aim and purpose, or "offices" of sovereignty. Both sides of the matter are worth attention because they reveal a thoroughgoing utilitarianism.

The mistake of so many of Hobbes's critics in thinking that he identified morals with the commands of the sovereign because he identified justice and injustice, right and wrong, with the latter, arises from overlooking the fundamental distinctions which Hobbes draws between *good* and *right*, and between intention and act—or *forum internum* and *forum externum*. Good is simply, to Hobbes, that which pleaseth a man; that which is agreeable to him—which, in turn, means "whatsoever is the object of any man's appetite or desire." It follows, of course, that since men differ in constitution and circumstance from one another, conflict or the state of war ensues; from difference of constitution, because what one man calls good another man finds evil; from circumstance, because when two men find the same object good it ofttimes can not be shared or mutually possessed. But besides the good of passion or desire of appetite, which is immediately determined by the momentary desire, whatever that may be, there is the good of reason, or rational good. To Hobbes, of course, the rational good does not differ from the sensible good in kind or quality; it is as much the pleasing as is the good of appetite. But it differs in being the object of a survey which includes *time*, instead of being a momentary estimate. For since finding

good in present appetite brings a man into conflict with others, it puts his life and possessions in jeopardy; in seeking present pleasure he exposes himself to future evils "which by strict consequence do adhere to the present good," or even to destruction of life. Hence, when a man is in a "quiet mind" he sees the good of present passion to be evil, and is capable of perceiving that his true good lies in a condition of concord or agreement with others—in peace which preserves his body and institutes secure property. "They, therefore, who could not agree concerning a present, do agree concerning a future good; which indeed is a work of reason; for things present are obvious to the sense, things to come to our reason only."[40]

Moral laws,[41] laws of nature, are then equivalent to the counsels or precepts of prudence, that is to say, of judgment as to the proper means for attaining the end of a future enduring happiness. The rules of good and evil are the procedures which any man, not perturbed by immediate passion, would perceive to be conducive to his future happiness. Let it be remembered that according to Hobbes all reason (in matters natural as well as moral) is simply a sequence of thoughts directed toward an end which regulates the sequence. Hobbes, then, really believes in laws (or at least counsels) of morality which in their origin are wholly independent of the commands of the sovereign. He ascribes to these all the eulogistic predicates which were scholastically current regarding the laws of nature: they are eternal, immutable, divine, *etc.* Right reason is the "act of reasoning, that is, the true and peculiar ratiocina-

[40] Vol. II, pp. 44, 47–48. Compare with this the following from the *Leviathan:* "For all men are by nature provided with notable multiplying glasses, that is, their passions and self-love, through which, every little payment appeareth a great grievance; but are destitute of those prospective glasses, namely, moral and civil science, to see afar off the miseries that hang over them, and can not without such payments be avoided." Vol. III, p. 170.

[41] They are called laws only metaphorically, since only a command is a law. But in the sense in which the faculty of reason is a gift of God, and God may be said to command us to act rationally, they are true laws or commands.

tion of every man concerning those actions of his which may redound to the damage or benefit of his neighbors. . . . I call it true, that is, concluding from true principles rightly framed, because that the whole breach of the laws of nature consists in the false reasoning, or rather folly of those men who see not those duties they are necessarily to perform towards others in order to their own conservation."[42]

It is not easy to estimate just how sincerely meant were all of Hobbes's professions of piety. I think it may safely be assumed, however, that whether or no he believed in a theological God, he did believe that reasoning was divine, and that there is a sincere piety toward reason in his regarding rational precepts as divine; and that accordingly he believed in some genuine sense that God was reason. There is something besides accommodation in the following language: "Finally, there is no law of natural reason that can be against the law divine: for God Almighty hath given reason to man to be a light unto him. And I hope it is no impiety to think that God Almighty will require a strict account thereof at the day of judgment, as of the instructions which we were to follow in our peregrinations here, notwithstanding the opposition and affronts of supernaturalists nowadays to rational and moral conversation."[43]

One of the necessary conclusions of such ratiocination on future well-being and conservation is the conclusion that it is not safe for any individual to *act* upon the moral law—which in effect is not to do anything to another which one

[42] Vol. II, p. 16, note. In his own day, Hobbes had logically the benefit of the fact that "self-preservation" was laid down by practically all writers as the first article of the law of nature. Moral laws are "eternal" to Hobbes in exactly the same way as are geometrical propositions. They flow from original definitions whose subjects include their predicates in such a way that the latter can not be denied without falling, at some point, into formal self-contradiction. The absolute "obligation" which the subject is under not to withdraw from the compact by which he entered the State is the obligation not to contradict his own premises.

[43] Vol. IV, p. 116.

would not have him do unto us—until he has some guarantee that others will do likewise. A person so acting renders himself exposed to evil from others. Hence suspicion and mistrust, even on the part of one disposed to regard the happiness of others, are inevitable where there is no power or authority which can threaten the evilly minded with such future pains as to give assurance as to their conduct. Hence, it is one of the laws of sound reasoning to enter into a civil state, or to institute a sovereign authority with power to threaten evil doers with evils in return, to such extent as to influence their conduct.[44]

Hence it follows in Hobbes, quite as much as with any of the upholders of the popular theory, that the end or purpose of the state is the "common good." He but insists upon the correlativity of this good with implicit obedience to the commands of a protecting power. To set up any private judgment about the *acts* by which the common good is to be attained is to weaken the protective power, and thereby to introduce insecurity, mutual fear and discord—all negations to the attaining of that happiness for whose sake the state was instituted. No matter how arbitrary the sovereign's acts, the state is at least better than the anarchy where private judgments as to good (that is to say, immediate appetite and passion) reign.

But there are other checks. The sovereign is himself under the law of nature: that is to say, he is subject to the "sanctions" of utility. As a reasoning creature, he will perceive that his interests as sovereign coincide with the prosperity of the subjects. "The profit of the sovereign and the subject goeth always together."[45] Hobbes uniformly lays down certain precepts which bind the sovereign's

[44] Hobbes never attributes physical omnipotence to the sovereign, but only a power to threaten and to enforce threats which arouses enough fear to influence men's outer conduct. His whole position very closely resembles that of Kant regarding the relation of the moral and the legal, much as the two differ in their conception of the moral.

[45] Vol. IV, p. 164.

conscience. In his *Leviathan* he develops at length the "Offices of the sovereign." They include equality of taxes, public charity, prevention of idleness, sumptuary laws, equality of justice to all, and the care of instruction. In his earliest writing he mentions all these, and also lays emphasis upon the duty of the civil authority to foster husbandry, fishing, navigation, and the mechanical arts.[46] In his discussion of the need that the state take charge of education, he clearly recognizes the limitations placed upon power to control action through positive commands appealing to fear. *Allegiance to the state is not a matter of positive command, but of moral obligation.* "A civil law that shall forbid rebellion (and such is all resistance to the essential rights of the sovereignty) is not, as a civil law, any obligation but by virtue only of the law of nature that forbiddeth the violation of faith." Hence, its ground has to be diligently and truly taught; it can not "be maintained by any civil law, or terror of legal punishment."[47]

Moreover, there are natural, or utilitarian, checks to the exercise of the power of sovereignty. In the first place, it can not affect, and (except through education) is not intended to affect inner inclinations or desires, but only acts—which are external. There is always a distinction between the just *man* and a just *act;* the former is one who means to obey the law or to act justly to others, even if by infirmity of power or by reason of circumstance he fail to do so. Even more significant is the check upon despotic action on the part of sovereignty in the mere fact that all acts *can not* be commanded. "It is necessary that there be infinite cases

[46] *Leviathan*, Part II, Ch. 30. Vol. III, Ch. XIII. "Concerning the Duties of them that Rule." See also Vol. IV, *De Corpore Politico*, Ch. IX, which sets out from the proposition, "This is the general law for sovereigns, that they procure, to the uttermost of their endeavour, the good of the people."

[47] Vol. III, pp. 323–324. It is in the same vein when Hobbes says that rebellion is not an offence against the civil law, but against the moral or natural law, for they violate the obligation to obedience which is before all civil law—since the institution of civil law depends upon it (Vol. II, p. 200).

which are neither commanded nor prohibited, but every man may either do or not do them as he lists himself. . . . As water, inclosed on all hands with banks, stands still and corrupts; having no bounds it spreads too largely, and the more passages it finds the more freely it takes its current; so subjects, if they might do nothing without the commands of the law, would grow dull and unwieldy; if all, they would be dispersed; and the more that is left undetermined by the laws, the more liberty they enjoy. Both extremes are faulty; for laws were not invented to take away, but to direct men's actions; even as nature ordained the banks not to stay, but to guide the course of the stream."[48] The sovereign who attempts too much dictation will provoke rebellion.

This summary account should make it clear that Hobbes deduces the need, the purpose, and the limits of sovereign power from his rationalistic, or utilitarian, premises. Undoubtedly a certain arbitrariness of action on the part of the sovereign is made possible. It is part of the price paid, the cost assumed, in behalf of an infinitely greater return of good. Right and wrong are nothing but what the sovereign commands, but these commands are the means indispensable to procuring good, and hence have a moral or rational sanction and object. To use Hobbes's own words: "In sum all actions and habits are to be esteemed good or evil by their causes and usefulness in reference to the commonwealth."[49] No franker or more thoroughgoing social utilitarianism could be found.

When we seek for Hobbes's natural historical associates, we should turn not to the upholders of political absolutism for its own sake, but to Jeremy Bentham. They are one in opposition to private opinion, intuition, and *ipse dixitism* as sources of the rules of moral action; they are

[48] Vol. II, p. 178. Compare the *Leviathan*, Vol. III, p. 335.
[49] Vol. VI, p. 220.

one in desire to place morals and politics upon a scientific basis; they are one in emphasis upon control of present and private good by reference to future and general good, good being understood by both as pleasure. Their unlikenesses flow from the divergent historic settings in which their ideas were generated. To Hobbes the foe was ecclesiastic interests, the source of divided allegiance and of the assumption of a right of private judgment over against a public law of right and wrong. His remedy was a centralized administrative state. Bentham found the foe in vested economic interests which set private or class happiness above the general good, and which manipulated the machinery of the state in behalf of private advantage. His remedy was a democratizing of government to be obtained by a mass participation in it of individuals, accompanied by a widening of personal initiative in the choice and pursuit of happiness to the maximum possible limit. To both, however, moral science was one with political science, and was not a theoretical luxury, but a social necessity. It was the common fate of both to suffer from a false psychology, from an inadequate conception of human nature. But both are protagonists of a science of a human nature operating through an art of social control in behalf of a common good. Progress beyond them comes not from a hostile attitude to these conceptions, but from an improved knowledge of human nature.

JOHN DEWEY.

THE ATTEMPT OF HOBBES TO BASE ETHICS ON PSYCHOLOGY [1]

In this paper there are not considered, first, the failure of Hobbes, the mechanical philosopher, to make the transition from moving matter to sensation, without setting up the crudest epiphenomenalism; secondly, his failure to make plain the transition from sensation to the superior form of reasoning exhibited in his ethical thinking; thirdly, his virtual elimination of any effective intelligence in his radical theory of will as nothing other than mechanical action.

This paper would approach the study of Hobbes, not so much in criticism of his errors, nor exposure of his incompleteness, as in approval of what he did achieve of positive value. Errors and deficiencies will thus fall into their proper places in the estimation of his ethical treatise. It will be sufficient later, on this background of appreciation, to indicate these, both what they are and how they arose.

Beyond the acknowledged fact that he is the proper founder of empirical psychology, it should be recognized that in his endeavor to base ethics and politics solidly on a thorough understanding of human nature, he was wholly right. In doing this he originated social psychology, which is now seen to be that without which the attempted science of sociology can not exist. So it is that the first part of his *Leviathan* is an attempt at such an analysis of man's mind and behavior as shall furnish the foundation for the second part, the ethics of political society. The implication of such an undertaking is that there will in this way emerge, not merely that sort of descriptive science later to be named sociology, but in distinction from this a science properly

[1] All references in this paper are to *The Leviathan*. The pages are those in Vol. III of the Molesworth edition of the English Works.

called ethics. An analysis of human nature rigorously carried through will disclose its reality. That his analysis was crude, showing inevitable mistakes, is to be expected in a new form of psychical investigation.

Again, that after all Hobbes was not aware that he was not living up to his own theory is not to be wondered at. It is not his psychological analysis that ultimately controls his thought in his discussion of the commonwealth. It is, on the one hand, his inherited stock of notions current in his day; on the other, his own mechanical philosophy that he uses. These get colored to a certain extent by his views of the motive forces in human nature brought over from the psychological part. But they are not derived from that part in any clear and satisfactory way. This is also to a certain extent to be expected in thought not yet able to free itself from the past, in the very forms and terms of which past it must proceed. The merit is that the thing was undertaken at all. The way was opened by the genius of this original thinker for future investigators to carry forward a work so nobly begun.

Not till quite recently has that work been taken up in the spirit of Hobbes. It has been necessary, perhaps, that the so-called new psychology should get lost in its absorbed interest in analyzing out the beggarly elements of conscious activity, should, in its laboratories, seem to be unaware, for the most part, that a man's life consisteth not in sensation, perception, memory, *etc.*, but most of all in complex responses to social situations, in which these elements play necessary parts, to be sure, but only much as the letters of the alphabet play their part in the paragraphs of a treatise. More pressing than the difficult problems of perception, are the much more difficult problems of man's creation of social situations and how it comes about that he is able to react to them. This requires profound investigation into the origin and nature of psychic structures that adapt themselves to

and modify, even create, the social situations to which they in turn adapt themselves. Not long since a prominent psychologist in one of our greatest universities passed the matter on to the poets and novelists, as something outside the domain of psychology proper. But just here is the very inner sanctuary of psychology; all else is but vestibule to this main affair.

Social psychology already is giving evidence that it is, in its various forms, that in which research will in future be active. And foremost of these forms in importance and in exciting interest will be psychological ethics. In this the work of Hobbes will come to its fruition, disproving, it may be surmised, his mechanical philosophy, while it justifies his endeavor to base the science of ethics on an analysis of human nature.

Having given him credit for his exceedingly valuable contribution, it will be worth while to indicate the source of his errors and the character of those errors.

In the first place, though he was the founder of both empirical and social psychology, he did not seem to be aware of the nature of that which he had discovered, nor, consequently, of the method by which the new research must be prosecuted. He was essentially a deductive thinker, while the new form of psychology was necessarily inductive. So it happened that instead of discovering in an inductive investigation of human nature principles for the study of human society, he really reversed that order. He brought from his reflection on political society current presuppositions that determined what he should find in human nature. Thus it comes about that in his psychological analysis he finds what corroborates his political assumptions. His vision is distorted from the start. The extraordinary open-mindedness of a Charles Darwin or a William James, patiently waiting on the revelation of fact, was far in the future.

In the second place, the seemingly natural attitude of intellectualizing all human impulses was very much in evidence. The catalogue he gives in Chapter VI of *The Leviathan* of human impulses or passions, as he names them, shows no consciousness of the difference between primary innate and derivative acquired impulses. "Fear is aversion with opinion of hurt,"[2] not an instinct, but an intellectualized impulse. "Both to love and to fear is to value." Pity "ariseth from the imagination that the like calamity may befall himself."[3] Mothers, forsooth, pity their helpless suffering babes from imagination that they may be in like calamity! One need not wonder how the "old hard-hearted fellow," as Francis Place called him, could so distort obvious fact. The answer is in part that the hard-hearted mind is too little emotional to be aware that the normal mind is fundamentally more emotional than intellectual, and in part that this kind of mind over-emphasizes logic to a certain obtuseness to fact.

So much for the defects and consequent errors of his method. It may now be asked what in his analysis of mind he found that bore on the problems of ethics and politics. The essence of his discovery is in the oft-quoted sentence from Chapter XI of the *Leviathan:* "I put for a general inclination of all mankind a perpetual and restless desire for power after power that ceaseth only in death." Desire of power is then the first and most fundamental conation in man's life, and innumerable other impulses are made by him to be but forms or modifications of this one underlying, all comprehending push. From this basal urgency arises the inevitable logical consequent, "War of every man against every man." "In such condition there is no place" for the various arts of civilization; "and which is worst of all

[2] Ch. VI, p. 43.
[3] Ch. VI, p. 47.

continual fear and danger of violent death; and the life of man solitary, poor, nasty, brutish, and short."[4]

As a necessary correlative to this desire of power in order that there may arise social order, Hobbes finds fear, for without fear power would be ineffective. It might be hinted in passing that this is a necessity of his logic rather than of his open-minded observation. Given these two impulses, power is able to overawe and establish order. He adds a third impulse through sense, perhaps, of the inadequacy of these two by themselves: "And reason suggesteth convenient articles of peace upon which men may be drawn together."[5] In this condition of established order men's desire of power, their fundamental conation, can most surely be satisfied. Thus ethics becomes the convenient adjustment of contending oppositions. To borrow some phrases from Carlyle, righteousness becomes "anarchy plus a constable" and "friendship armed neutrality." Thus the push to power is at once the ultimate source from which both war and social order spring. And the rules of that order, established in the interest of the widest satisfaction of the desire for power, are the civil and moral laws.

Such, in brief, I take it, is the result of his psychological investigation, and the ethical consequent in logic of his discovery. Now is human nature what he seemed to find it? The answer to this question requires an understanding of what Hobbes means by power, fear, and the function of reason. It requires also a corrected analysis of human nature.

The power for which man has this fundamental desire "is not always that a man hopes for a more intensive delight than he has already attained to, or that he can not be content with a moderate power, but because he can not assure the power and means to live well, which he hath at

[4] Ch. XIII, p. 113.
[5] Ch. XIII, p. 116.

present, without the acquisition of more." Again we have, "The object of man's desire is . . . to assure forever the way of his future desire."[6] Again we find, "The power of a man, to take it universally, is his present means to obtain some future apparent good."[7] The possession of the means to assured future satisfaction of desire becomes the essence of desire. So not only natural endowment, but whatever becomes a means to such assured possession, is an element of power; not only acquired skills, but reputation, honor of men, friends, knowledge, anything that helps is such an element. Desire to possess the means that assure future satisfactions of desire is then power in Hobbes's conception of power. It is, however, a conception not consistently held to.

This really puts the cart before the horse. It puts the means of life before the end of life. It is sense of life before the means that contributes to that sense of life men desire.

> " 'Tis life where of my nerves are scant,
> More life and fuller that I want."

This sense of life takes innumerable forms. It may be the sense of power as such, in manifold forms, as ability to think, to feel, to do; it may be domination of one's will or personality over others, or over nature, over one's own impulses—the will to power in science, art, morals, in trade, finance, domestic, international; or it may be ecclesiastic politics, in greed of gain, or beneficent service of humanity, in mere destruction with Genghis Kahn, or construction with a Washington, in building a material empire with a Napoleon, or a society of justice with Plato, of love with Jesus.

Common to all forms of life is a push to acts that tend toward continuance and growth. For humanity this is

[6] Ch. XI, p. 85.
[7] Ch. X, p. 74.

impulse toward self-preservation, whether in the individual or the race, and toward expansion, or self-realization, whether in the individual or the race. Here is resistance to destruction, and resistance to restraint. Here is outreaching for means to expand life, for "commodious living"[8] in manifold forms. The self asserted against impairment, the self asserted in development, varies in essence greatly from man to man. It may be a social as well as an egoistic self. It may save all that is worth while to itself by loss of life, as nurse in the sick-room, as soldier on the battle-field, or martyr to principle on the scaffold. It may realize, expand itself more in absorption into social service, than in seeking individualistic destruction by domination over others. It may sense its own expansion and elevation in devotion as well as in rule. True, there is "desire of power after power that ceaseth only in death." But the forms of power are many. Hobbes makes the logical mistake of identifying all varieties of power with, to him, its most obvious forms. It is a defect of observation as well. He must have read history badly, and looked on the events of his own day with dull eyes.

A like error is made by Hobbes in his treatment of fear. He defines fear as "aversion with the opinion of hurt."[9] This shows again his fixed habit of intellectualizing purely instinctive impulses. To define fear as aversion to hurt is, with him, to identify fear with aversion, and extend its meaning in the same manner that the meaning of power is extended to the utter confusion of thought. Fear as such is a clearly marked emotional and motor reaction to a certain definite type of situation, comparable to other reactions, named anger, parental and sexual love. Men have aversions to balked impulses of every kind. In every-day speech we may well enough speak of fears when we mean

[8] Ch. XIII, p. 116.
[9] Ch. VI, p. 43.

merely checked impulses, whether they be appetites, instincts, or those acquired, and often very elaborate complex dispositions called by Shand and McDougall, sentiments.

But beyond this in his definition and discussion of fear, there is no recognition of the various forms of hurt which the human being may experience. They are as many as the forms of the self which resist impairment and push to expansion. A man may have such an aversion to what he calls the loss of his soul, or his honor, merely, as in the duel, that it may go beyond any control by fear, may even lose in exalted moments all fear properly so called. A man may have such an aversion to the extinction of his life because of its worth to others that he will fight to save it, and fear as such may cooperate with his rational impulse. A mother's aversion to injury to her babe, a lover's aversion to the loss of his true love or to injury to her fair name, that of a patriot to impairment of his country's honor or power, or to his country's disregard of the claims of justice, may drive to risk of life, to sacrifice of fortune or fame. The element of instinctive fear, fear properly so called, may in all such cases cooperate, or may even have to be overcome, but these aversions are not in themselves fears. They are aversions to balked different native or acquired dispositions. And such balked dispositions may cause more pain than any amount of instinctive fear, and the impulse to the satisfaction of these dispositions may override fear.

Social organization in fact rests on, springs out of, a complex of many more and other impulses than that desire of power after power and that fear, on which Hobbes conceived society and government to rest. Fear does not play, as Wallis in his *Great Society* has pointed out, any such part as Hobbes believes. Such statements in *The Leviathan* as follow are in the very teeth of facts obvious to the open-minded: "Men have no pleasure, but on the contrary a

great deal of grief, in keeping company where there is no power to overawe them all,"[10] and again, "No man obeys them who they think have no power to help or hurt them."[11] So far is this from being true, men are far more content in the satisfied innate impulse to follow the born leader, than in any perfect order established in fear. Hobbes seemed utterly unaware of this native impulse that must have been in evidence in his day as everywhere and in all times. Surely the loyalty to Charles I rested on something other than fear of hurt, or hope of gain through his authority established. From the happy loyalty of boys to the gang leader, up through that to the adored party chief, and to the military captain for whom soldiers seem gladly to battle and die, to the followers of the founders of religion, you find a better basis for enduring organization and government loyally served and obeyed, than from all the fears in the universe. Men's loyalties are not based on fear, though fear may be a cooperating element; nor again on desire of power, in Hobbes's sense of the word, though that may also cooperate. Primary impulses of gregariousness, of affections, whether of sex, parenthood, comradeship, friendship, or the joy of subordination to the leader—all these, and other more obscure impulses, make toward socialization in a much more vital, and far less mechanical way than appeared to Hobbes. But that it springs out of human nature, and that its origin and true nature are to be sought in human nature, as he asserted and endeavored to show, remain true. So while we may agree that the real springs of human conduct were after all largely unknown to him, we must acknowledge that with him began in the modern world that form of ethical research which will lead to solid results.

In his statement that "Reason suggesteth convenient articles of peace upon which men may be drawn together,"[12]

[10] Ch. XIII, p. 112.
[11] Ch. X, p. 76.
[12] Ch. XIII, p. 116.

he has recorded an observed functioning of mind, which in truth goes far beyond the limits within which he confines it. There is as certainly a push, an impulse of human nature to its rational coordination, as there is in it an impulse to power in Hobbes's sense. And this impulse to rationality is not as he conceived it, the mere instrument of the push to power, discovering and defining means, in which "Spirit works lest arms and legs want play."

It is as certainly impulse toward the discovery and definition of the nature of ends in order to choice, as it is toward the discovery of means and their use. Human nature moves toward very varied forms of expansion, of realization. It moves as well toward the defining and valuing of those forms. The "convenient articles of peace" suggested are as certainly concerned with harmony of inner impulses as toward the checks on social assertion of power. As reason proceeds with ever clearer definition of innate and acquired impulses, and valuation of each for fullest satisfaction of the conation to expansion, the push to power may be found to hold a far different position than what it holds in Hobbes's system.

In his view what actually takes place is the organization of the powers of the many against the aggressions of the powers of the few. So the end of government is, as he states it, safety,[18] the protection of each against aggressive power of any. It is organized power in the interest of the greatest possible satisfaction of the desire for power of each, which is the fundamental desire of man.

If the fundamental impulse of human nature in its development be found to be not for power, as such, which is only one of many forms, but for development, realization in its most extended sense, then the end of government is not safety, a balance of powers protecting each. It becomes something far more rational. Its end is such an organiza-

[18] Ch. XXX, p. 322.

tion of varied human impulses as shall further the development of personality. The ideal will not then be peace through a mechanical balance of powers, but a society of personalities in which each individual unfolds his personality in such a manner that in this very act he helps others to unfold theirs. In such an organized society safety will be involved; the future will be secure; the impulse to power in its due place and proportion will be satisfied. This established, all other things will be added to as involved in it. Hobbes's "desire of commodious living" will be satisfied as it can be in no other way.

If, then, we undertake the study of human nature as disclosed in history and in profound analysis of the developing individual, will not this be that which will be revealed to us as the psychological basis on which the state must rest? This discovery, though different from what Hobbes found, will be made, nevertheless, through research in the direction and the manner for which his name largely stands.

HERBERT G. LORD.

THE PSYCHOLOGY OF IDEAS IN HOBBES

The general revolt against scholasticism assumed too many forms to enable one to summarize it in a phrase. In some quarter or other reactions against every element of the doctrine of the school occurred. The movement towards the inductive and experimental investigation of nature, of which Francis Bacon was the protagonist, was by no means limited to him. Moreover, this movement can not be taken as signalizing the whole meaning of the revolt. The rebellion had its religious, moral, metaphysical, artistic, and political, as well as "scientific," moments. Only as a very general transformation of view-point, of desire, purpose, and insight, can the new currents of thought be called one.

Thomas Hobbes affords an interesting example of participation in a common dissatisfaction and repudiation of the scholastic standpoint with striking divergences from the philosophical endeavors of other prophets of the new era. Hobbes's intimacy with Bacon suggests the picture of a relation of master and follower between them, but such a picture is assuredly misleading. Toennies [1] and Robertson [2] both object to such a depiction of the relationship of the two men. The true intellectual progenitor of Hobbes is Galileo. Galileo had destroyed the medieval concept of purpose as a category applicable to nature. The conception of nature as a system of mechanical forces measurable in terms of mathematics took captive the imagination of Hobbes, and was at least instrumental in the clarification of his thought, if it did not determine its course. Toennies [3] declares that the epistemological question of the time was

[1] "Anmerkungen über die Philosophie des Hobbes," *Vierteljahrsschrift für wissenschaftliche Philosophie*, Vol. 3, 1879, pp. 459–460.

[2] "Hobbes," Blackwood's Philosophical Classics.

[3] *Ibid*, p. 461.

whether knowledge attaining the level of the certainty of mathematics, of geometrical demonstration from axioms and definitions, was possible, and how it was possible. When Hobbes, relatively late in life, made the acquaintance of Euclid, it was this problem that was formulated in his mind. It was the natural consequence of Galileo's work. Galileo regarded mathematics as the indispensable prelude to philosophical study [4] and Hobbes shared the opinion. The former, according to Toennies, really inaugurated the age of mathematical deduction. Such deduction was to become Hobbes's ideal of method. Bacon can hardly be said to have grasped this epistemological problem; and the correlative ideal of method was not a part of his thought. In the light of this, therefore, Bacon can not be regarded as the immediate forerunner of Hobbes. Seth remarks that Hobbes's quarrel with scholasticism "concerns the subject-matter, not the method, of that philosophy. He does not join in Bacon's protest against the scholastic habit of anticipating nature, of deducing facts from theories; he has no thought of substituting a scientific induction for the deductive rationalism of scholastic philosophy. So far as the question of method is concerned, he is the opponent rather of Bacon than of the schoolmen; for him, science, as such, is rationalistic or deductive, not empirical and inductive. Rational insight, not empirical knowledge, is his scientific ideal." [5]

It was, then, the teleological character of the old physics that was a chief point of reaction for Hobbes. The mechanistic character of the new physics implied a difference in procedure. In place of the older process of the classification of qualities, the study of nature in terms of quantity was inaugurated. This change in the character of physics literally meant the application of mathematics to nature.

[4] *Cf.* Toennies, *ibid*, p. 456

[5] *English Philosophers and Schools of Philosophy*, p. 58.

So that the new epistemological problem, the new conception of nature, and the geometric ideal of method are elements of one movement.[6]

A detailed account of the sources and of the arising and maturing of Hobbes's thought is out of place here. His attitude toward the doctrine of the plurality of substances and the cognitive correspondence of idea and object are our first concern.

When nature is conceived as a vast mechanical system, nature is but one substance. But, unlike Descartes, Hobbes does not rule the "mind" out of nature and devise a second substance in which the mental life may be conceived as taking place. Human nature is a part of nature; it is a product of the same forces; it is regulated by the same laws as nature itself. The reduction of qualities to quantities applies in the sphere of the psychological since that is but an integral part of the whole physical system. Hobbes speaks, to be sure, of the "two principal parts of man," body and mind. But no duality of substance is intended. Mind is defined only by an enumeration of "mental" faculties. There is but one substance, body. "The word body, in the most general acceptation, signifieth that which filleth, or occupieth some certain room, or imagined place; and dependeth not on imagination, but is a real part of the universe. For the universe, being the aggregate of bodies, there is no real part thereof that is not also body." [7] Spirit, according to Hobbes, originally meant air, or breath, and comes to mean incorporeality from having originally indicated subtle body. "Matter is the same with body; but never without respect to a body which is made thereof. Form is the aggregate of all accidents together . . . spirit is this fluid, transparent, invisible body." [8] The

[6] *Cf.* Toennies, *ibid.*

[7] *Works of Hobbes*, Molesworth edition, 1839, Vol. 3, *Leviathan*, pt. 3, ch. 34; all references are to this edition.

[8] *Answer to Bishop Bramhall*, Vol. 4, p. 309.

notion of an incorporeal substance is a contradiction in terms, a vain idea induced by apparitions, hallucinations, and dreams. It is a sort of mental hob-goblin. Hobbes uses the terms "ghost" and "incorporeal substance" in juxtaposition, and is serious in so doing.[9] From Hobbes's objections to Descartes it appears that he was either unable to understand Descartes's notion of the immateriality of thought or, what is more probable, perversely refused to comprehend it. In this Gassendi resembled Hobbes. The notion of immateriality, at least in the sense of the immateriality or ideality of form, was a commonplace to those imbued with the scholasticism of the traditional education of that age. Descartes's soul substance represents not so much an innovation and a novel distinction, as a renovation of a time-honored conception, coupled with a more explicit comprehension of the implications following the deduction of a plurality of substances to two. To Hobbes and Gassendi, archheretics of the age, Descartes appeared to be the victim of a great superstition, as bad as that of belief in occult powers. On the one hand, in their eyes, he was proclaiming allegiance to the new science of nature; on the other, he was asserting the validity of a nonsensical notion that was one of the rankest growths of scholasticism.

The animus of Hobbes's strictures on the notion of incorporeal substance was derived not so much from a devotion to a monism of substance as from a conviction of the worthlessness of the concept of substance as such. He does, of course, speak of body substance, but concerning this single substance he really has little to say. At bottom, he is of the opinion that any and every notion of substance is vain, empty, and unfruitful. Its serviceableness, in so far as it has any, is in its use as a limiting idea. The phenomena of nature, and these include the phenomena of human nature, are motions. The science of nature is essentially the science

[9] *De Corpore*, Vol. 1, pt. 4, ch. 25, p. 399.

of dynamics or mechanics—a mathematical quantitative investigation of the sequence of physical events. The new conception of nature serves, for Hobbes, all the purposes formerly served by the concept of substance. The thought of nature as a dynamical system is so fundamental with Hobbes that he seems well-nigh to confound pure mathematics with its applied forms. The true relationship between mathematics and physical science is obscured in his thinking through the discovery that nature possesses a sort of mathematical structure. And it is this vision that fructifies his thought, rather than the notion of the oneness of substance. As has been indicated, he desired to give knowledge of nature the certainty of geometry. The practical identification of geometry and mechanics raises the laws of motion to the rank of geometrical axioms and definitions, and mechanics, as the science of all nature, thereby attains, in his mind, a position comparable to the deductive, demonstrative certainty of geometry.[10] Motion thus becomes the chief category of his thought while the concept of substance lapses from mind. For once science as the study of motion is launched, the notion of body retreats from sight; and one could properly say that the notion of substance takes the form of the conception of nature as a uniform, mechanical system. This opinion is corroborated by the fact that Hobbes seems at little pains to determine the nature of substance. Having served its purpose as a counterblast to pluralisms and dualisms of substances, it becomes a shadowy sort of metaphysical background for science. Owing to this fact, Hobbes's philosophy is sometimes called phenomenalistic. Space and time are phantasms. Accidents do not "inhere" in bodies, but are our ways of conceiving body. All accidents can be thought away from body, save magnitude. The accidents

[10] *Cf.* Toennies, *ibid*, Vol. 4, 1880, p. 69; *Philosophical Elements*, sect. 2; *De Homine*, ch. 10, 5.

of body are phenomena of motion, and science is knowledge of these accidents. Thus natural philosophy deals with a world of motions and accidents, the relation of which to substance remains unsettled; and it so remains, probably, because Hobbes thought of the problem of this relation as vain and fruitless. Had he not regarded the notion of substance as empty, he must have raised questions concerning the relation of motion to substance. But in the main, questions of that type are left to one side.

It is noteworthy that Hobbes's psychology is developed largely in the interest of physics. Of the psychology of sensation and perception, at least, this is true. As all psychological process is really motion, psychology is a branch of physics. A brief survey of his psychology will indicate this.

The subject of sense is the sentient itself. And it is of prime importance to observe that this "subject of sense" is neither consciousness, nor soul, nor mind, but, in Hobbes's own phrase, "some living creature." Sense is motion in the sentient. All qualities "called sensible, are in the object, that causeth them, but so many several motions of the matter, by which it presseth our organs diversely." [11] These motions are propagated on into the organism. But this motion meets an "outward" motion, and this clash of motions is sense. "Sense is a phantasm made by the reaction and endeavor outwards in the organ of sense caused by an endeavor inwards from the object, remaining for some time more or less." [12] "Neither in us that are pressed, are they (qualities) anything else, but divers motions; for motion produceth nothing but motion." [13] In Chapter 25 of the *Concerning Body*, we learn that qualities are not accidents of the object, for light and color, for example, are merely phantasms of the sentient.

[11] Vol. 3, 1, p. 2.
[12] *Concerning Body*, Vol. 1, pt. 4, ch. 25, p. 301.
[13] Vol. 3, ch. 1, p. 2.

How thoroughly the psychology of sensation and perception is regarded by Hobbes as an integral part of physics is indicated by the fact that Hobbes raises the question whether there is not sensation in all bodies.[14] For reaction, as well as action, characterizes all bodies, and sensation is a phenomenon of a type describable in such categories. He falls back on the fact that the human body retains the prior motion as a dampened but persistent organic reverberation; and in this resides the possibility of memory. Or, to speak more accurately, memory, in Hobbes's sense of the term, is an essential part of sense. He does not seem, however, to offer an explanation of how the motions from sense persisting in subliminal form come to attain, when we remember, a state of excitement approximating that of the original experience. "For by sense, we commonly understand the judgment we make of objects by their phantasms; namely, by comparing and distinguishing those phantasms; which we could never do, if that motion in the organ, by which the phantasm is made, did not remain there for some time, and make the same phantasm return. Wherefore sense . . . hath necessarily some memory adhering to it." [15] Hence the "nature of sense can not be placed in reaction only," [16] but an organic continuance of the motion, or reverberation, must be added to the action-reaction scheme. Yet it is to be noted that this does not remove sense psychology from physics, for the persistent motion is just motion in a given body. Rather it means that the physics of sense deals with an added factor.

Since all ideas are originally from sense, they are also motions in the sentient. Hobbes is loose in his use of terms, and he maintains with consistency no distinctions between images, representations, ideas, and conceptions. They are all really images. All psychological facts are motions or

[14] *Concerning Body*, Vol. 1, p. 393.
[15] *Ibid.*
[16] *Ibid.*

clashes of motions. Sense processes differ from ideas and images only in that the latter are revived motions or motions continuing, to a greater or less degree, after the removal of the extra-organic object or stimulus. All mental processes are at bottom of two kinds, either sensations (perceptions) or images. The general name for both kinds is "phantasm." "The imagery and representations of the qualities of the thing without, is that we call our conception, imagination, ideas, notice, or knowledge of them; and the faculty or power by which we are capable of such knowledge, is that I here call cognitive power, or conceptive, the power of knowing or conceiving." [17] Imagination is defined as "conception remaining, and little by little decaying from and after the act of sense." [18] The representative image is a state of sense overpowered by another and later sense experience. Productive imagination is the composition of motions in the brain.

The phantasm is called the "act of sense." "From this reaction by the motions in the sentient phantasm or idea hath its being." Hobbes says with reference to phantasm as the act of sense, that "the *being a doing* is the same as the *being done*"; [19] he adds that "a phantasm being made, perception is made together with it." This seems to mean that the motion process, or the clash of motions, *is* itself the idea or perception, the phantasm.

Hobbes distinguishes, or seems to distinguish between the cognitive or conceptive faculty and the imaginative or motive faculty. "For the understanding of what I mean by the power cognitive, we must remember and acknowledge that there be in our minds continually certain *images* or conceptions of the things without us, . . . the *absence* or *destruction* of things once imagined doth not cause the *absence* or *destruction* of the *imagination* itself. This *imagery*

[17] *Human Nature*, Vol. 4, ch. 1.
[18] *Ibid*, ch. 3, 1.
[19] Vol. 1, pt. 4, 25, p. 392.

and *representations* of the qualities of the thing without, is that we call our *conception*, *imagination*, *ideas*, *notice*, or *knowledge* of them; and the *faculty* or power by which we are capable of such knowledge, is that I here call *cognitive power*, or *conceptive*, the power of knowing or conceiving." [20] But then Hobbes proceeds to equate obscure conception and phantasy or imagination, [21] so that the distinction between the two faculties is left inexact. Certainly no distinction between image and conception appears from these citations. But while Hobbes, as a matter of terminology, does not distinguish between image and conception as existences, he has a certain distinction in use and meaning that can be most easily denoted by these terms. To make this clear it will be necessary to turn briefly to his idea of knowledge.

Hobbes has in mind a knowledge system comparable to geometry in method and certainty. This universal system, which represents the ideal of knowledge, is contrasted with the particularity of sense experience. The opposition between the universal principle in which alone consists true knowledge and the empirical manifold does not lead in the case of Hobbes to an attempt to derive knowledge from sense experience. His problem is not stated in the form: How can we obtain from sense experience the organized body of universal principles? Rather the contrast between principle and particular sense experiences develops into an antithesis that runs through his theory of knowledge. The experiences of sense are, in conformity with Hobbes's mechanistic view of nature, effects. They are not differentiated from other effects in nature, because they involve no unique principle. The fact that sense effects happen to concern a sentient being does not signify that they are of an order essentially different from other sorts of effects, for the sentient being is an integral part of the mechanical system. Now true knowledge is knowledge of causes, and

[20] *Human Nature*, Vol. 4, p. 2–3.
[21] *Cf. ibid*, p. 9.

causes in Hobbes's system of knowledge are to correspond to the first principles of mathematics. Therefore the problem of the relation of universal principles and sense experience is formulated in terms of cause and effect. In consequence, there arises an antithesis between knowledge from causes to effects and knowledge from effects to causes.

Geometry, the model that Hobbes seeks to follow, begins with axioms and definitions and proceeds deductively to the exposition of consequences. But why is geometry demonstrable? Because the power to construct the object of thought is in the demonstrator.[22] But with respect to knowledge of fact, sense experience can not give us general notions, universal principles, definitions, and axioms. We do not know the construction of things. Science, imitating geometry, proceeds deductively from causes, which are the axioms and first principles of science, to effects. Sense experience is an effect, and, therefore, can not in any direct fashion supply the starting-point for scientific knowledge. From sense effects, or from effects generally, we can demonstrate, not the real causes, but only possible causes, of the effects. So the antithesis takes the following form: on the one hand is scientific knowledge—the only real knowledge—proceeding from causes to effects and revealing necessities of connection; on the other hand, we have knowledge of possible causes of real effects, and this is mere knowledge of probability, knowledge of experience, unscientific knowledge.

Hobbes does not give a satisfactory account of how we are to obtain the first notions of science. If, however, he does not solve this difficulty, two things aid him in glossing it over and, perhaps, convincing him that he has solved it. First of all, there is that identification of mathematics and mechanics already referred to. By analytic procedure the primitive notions (axioms and definitions of physical

[22] *Cf. Six Lessons to the Professor of Mathematics*, Vol. 7, p. 134; *cf.* Toennies, *op. cit.*, Vol. 4.

science) are to be secured, and then, proceeding synthetically, the effects are to be demonstrated from their causes or first principles. The body of definitions, or primitive truths, thus obtained by analysis would form First Philosophy.

The second recourse afforded Hobbes is language, an instrument that makes possible the transcendence of the limitations of experience. Reasoning is computation, addition and subtraction; and judgment is the uniting of two names by the copula "is." The universal name is a counter or symbol, and truth is consistency in the use of terms. The universal name does not represent any particular existing object, nor any particular image. It may indicate indifferently any individual object of a class, or an image of any individual object of a class. In short, it is a matter of no importance what image is attached to the name. The essential thing is that the signification of the name be clearly determined upon and that it be accepted.

Now to return to the distinction of image and conception. The image, particularly in so far as Hobbes uses conception as terminologically equivalent to image, is itself an existence, a motion in the sentient, a physical *effect*. Experience is "store of phantasms," and phantasms are, as existents, effects, the source of problems. The image is literally like the images in a mirror. The shilling, observed through a glass of a certain figure, is seen as twenty shillings. The shilling is a body—the images given by the glass are, in Hobbes's own terms, fancies, idols, mere nothings, echoes.[23] The proposition that "there is nothing *without us* (really) which we call an *image* or colour" is proved by pointing out that "the image of anything by *reflection* in a *glass* of *water* or the like, is *not* anything *in* or *behind* the glass, or *in* or *under* the water." [24]

Conceptions, in so far as they are composed of images, are like all other images. But conception as a name stand-

[23] *Decameron Physiologicum*, Vol. 7, pp. 78–79.
[24] *Human Nature*, Vol. 4, pp. 4–5.

ing for a class of objects (or class of images) and accompanied by an image of a particular object of the class, means the *term of discourse.* What we should ordinarily intend by "conception" or "general idea" signifies for Hobbes symbolic word counters with meanings determined and agreed upon, which form the terms in the process of reasoning. Image and conception as psychological existents are one and the same. But with reference to knowledge, conception is the universal name standing for a group of particular empirical facts (images or sense perceptions), and knowledge based upon such terms is universal, scientific knowledge; while knowledge based upon particular images, or trains of images, is unscientific and not of universal validity. This is clarified by a reference to Hobbes's *Objections to Descartes.* The latter has said that he does not understand by the imagination what the wax is, but conceives it by the mind alone. A distinction between image as physiological process and idea as an immaterial spiritual entity is thus implied. Hobbes objects to this as follows: "There is a great difference between imagining, *i. e.*, having some idea, and conceiving with the mind, *i. e.*, inferring, as the result of a train of reasoning, that something is, or exists. . . . But what shall we now say, if reasoning chance to be nothing more than the uniting and stringing together of names or designations by the word *is?* It will be a consequence of this that reason gives us no conclusion about the nature of things, but only about the terms that designate them, whether, indeed, or not there is a convention (arbitrarily made about their meanings) according to which we join these names together. If this be so, as is possible, reasoning will depend on names, names on the imagination, and imagination . . . on the motion of the corporeal organs. Thus mind will be nothing but the motions in certain parts of an organic body." [25] "It is evident that essence in so

[25] *Philosophical Works of Descartes,* Ross and Haldane, Vol. 2, p. 65.

far as it is distinguished from existence is nothing else than a union of names by means of the verb *is*." [26]

In short, in terms of psychology, there is no distinction between conception and image. Words, one would suppose, are also images. But with reference to knowledge, conception as universal names signifying a class of objects or an abstract principle is in sharpest contrast to the particular image. While for Descartes the image is what Hobbes would have it be, namely, motion (or some purely physical change) in the sentient organism, the idea or conception is an entity in an immaterial soul substance.

Mention has been made of what has been called Hobbes's "phenomenalism." In connection with the meaning of this term as applied to Hobbes certain questions concerning qualities arise. First of all, what is the "object" of perception? It is not any sense quality, or a combination of them, and merely that. The object of sight, he says, is neither light nor color (which are phantasms in the sentient), but the object that is light or colored.[27] "The whole appearance of figure, and light and color is by the Greeks commonly called *eidos* . . . and by the Latins, *species* or *imago;* all which names signify no more but appearances." [28] Now subtracting from the "object" these secondary qualities, what remains? Motion, and in some obscure sense, body, substance. Consider briefly in connection with this certain aspects of Hobbes's account of qualities.

The causes of sensible qualities, he says, can not be known until we know the causes of sense.[29] Sensible qualities from the side of the object are "so many several motions, pressing our organs diversely;" [30] from the side of the perceiving subject, they are again "nothing but divers motions." [31]

[26] *Ibid*, p. 77.
[27] Vol. 1, p. 404.
[28] *Ibid*, pp. 404–405.
[29] Vol. 1, p. 72.
[30] Vol. 3, p. 2.
[31] *Ibid.*

. . . Qualities are apparitions of the motions produced by the object on the brain; but the apparitions or images are also said to be "nothing *really*, but *motion* in some internal substance of the *head*."[22] Four propositions are advanced[23] that should be considered here: "That the subject wherein color and image are inherent, is *not* the *object* or thing seen. That there is nothing *without us* (really) which we call an *image* or color. That the said image or color is but an *apparition* unto us of the *motion*, agitation, or alteration, which the *object* worketh in the *brain*, or spirits . . . that as in *vision*, so also in conceptions that arise from the *other senses* the subject of their *inherence* is not the *object*, but the *sentient*."

It would appear, therefore, that the "object" reduces to motions of body. Secondary qualities at least depend on the organism and are *in* the organism. Hobbes's position is, then, in general, that of modern physics. For the physicist the given color is just so many vibrations per second in the medium, that is, a certain kind of motion. For Hobbes as physicist, the subject-matter of investigation is the various kinds of motion. Body is distinguished from its "appearances." Body as a principle beyond appearances affords a problem for metaphysics rather than for physics. Appearances as phenomena of motion form the subject-matter of physics. Body as substance ranks as a sort of general postulate of physical science. This seems to be, in a general way, the drift of Hobbes's meaning.

To return for a moment to the psychology of perception. It is to be noted that while the cause of perception is the motion which is propagated through the medium into the organ of sense and then on into the brain, this motion is not in and by itself the sensation quality or the perception. The perception (sensation) arises only when the inward motion clashes with the outward motion or "endeavor."

[22] *Human Nature*, Vol. 4, ch. 7, p. 1; *cf.* ch. 8, 1, and ch. 10, 1.
[23] *Human Nature*, Vol. 4, p. 4.

The "apparition" or phantasm is then not the incoming motion itself. But then we may ask: Is the phantasm the *clash* of the motions? Is the psychological process just this reaction upon another motion, a sort of compound motion resulting from the combination of the inward and outward motions, or is it the way in which the total motion process appears to the percipient? There seem to be two possible interpretations of Hobbes's thought: either the clash of the "endeavor inwards" and the "endeavor outwards" *is in itself* the apparition or quality; or the qualities *depend on, but are something more than,* the motion reaction in nervous substance on the inward-going motion which is a continuation of the motion originating in some extra-organic source. The "clash" is either the *apparition or sense quality itself,* or *that which appears in sense perception as the quality.*

Hobbes's own statements afford no ground for doubting that for him the clash of motions is itself the quality, apparition, or phantasm. Or in terms characteristic of his age, they are simply movements of the animal spirits, vibrations in the nerves; the only qualification is that they are compound movements or vibrations. The idea may be untenable, the theory superficial and neglectful of real difficulties, but it is Hobbes's answer.

We may ourselves introduce the question of consciousness, in order thereby to indicate the unsatisfactory character of this psychology. But then we are injecting into the exposition of his thought an order of questions of which he was not cognizant or, being aware of them, simply neglected. Having denied the existence of incorporeal substance, he could not and would not regard the apparition or conception or image as a soul state, a spiritual event, in an immaterial soul, and corresponding to, rather than being, a physical motion. It is the result of an inadequate historical perspective to raise the question of the relation of the

"clash" of motions to "consciousness" or to make the immediate object of sense a "state of consciousness" in the ordinary sense of the term (see below).

The source of misunderstanding is the question of what is meant by the "object," and to this we must return. What the object is, does not hinge upon any question of a relation to consciousness, but upon the relation of the question of psychology to the question of physics. In terms of Hobbes's physics, which we must remember is essentially mechanics, the "object" is a set of "divers motions," connected in a manner not wholly explained with substantial body. The accidents of body, for Hobbes the physicist, are those divers motions. All accidents can be generated or destroyed, save those of magnitude and extension; body can never be generated or destroyed. Bodies are things and are not generated, accidents (save magnitude and extension) are generated and are not things. These statements define the subject-matter of physical science.

But the "object" as that which the sentient has, or as the content of the sentient's experience, is not precisely the same as the "object" existing outside the sentient. It is not these "divers motions" constituting the extra-organic object, but the immediate object of sense, and this is a phantasm, apparition, or combination of phantasms. Now the *explanation* of the psychological process and fact is cast in terms of physics. The external cause of the phantasm is motion in the extra-organic object. In fact, it would be accurate to say that the cause is that set of motions which *is* the extra-organic object. The phantasm itself, as a matter of existence, is motion; but not the motion propagated into the organism without alteration. On the contrary, it is rather the product of the combination or interaction of two motions or two sets of motions. That which forms the content of the sentient's perception is, therefore, a complex

of sense qualities; and it is the *joint* product of the extra-organic object and the equally physical living organism. The psychological fact is thus not the "divers motions" of the external object, but another set of "divers motions" differing from the former in two ways: first, in that the latter are *motions in the sentient organism*, and secondly, in that they are the *results* of the former set of motions acting upon, and being reacted upon by, the percipient organism. In other terms, the psychological content is the immediate data of sense; for physics it is the motion accidents of body. A remark of Hobbes [34] may elucidate the point. The sun, he says, seems to the eye no bigger than a dish: but "there is behind it somewhere something else, I suppose a real sun, which creates these fancies, by working, one way or other, upon my eye, and other organs of my senses, to cause that diversity of fancy." The "real sun" indicates the external object stimulus; the "diversity of fancy," the sun-having-the-size-of-a-dish, is the content of the perception.

We are simply endeavoring here to render clear the difference between the phantasm and its extra-organic correspondent as Hobbes himself saw it. Both phantasm and extra-organic object are physical effects—neither is "mental." But the phantasm is not an exact replica of the "object," for they are two "sets of divers motions," and that set which is *phantasm* differs from the correlated set which is the outside "object" by the extent to which motions native to the sentient fuse with the motions propagated from the external object into the sentient. This is consequently no denial of a correspondence, nor, for that matter, of some degree of similarity, between phantasm and outside object; that which is denied is the exact and complete similarity of phantasm and the object without the sentient. In brief, the fact that motions from without enter a living organism makes a difference to those motions.

[34] *Decameron Physiologicum*, Vol. 7, pp. 80–81.

In the light of this, the assertion that Hobbes's doctrine has nothing to do with "mental states" seems justified. Phantasms are neither "mental," "spiritual," "psychical," nor are they "states of consciousness." Such terms with their customary modern connotations are totally inapplicable to a psychology of the type of Hobbes's. Seth[35] affords a curious instance of this misapplication. "The immediate objects of the senses are, Hobbes finds, mere 'phantasms' or 'appearances'—as we should say, states of consciousness, having no existence outside the mind itself . . . the object of sense perception is purely subjective, and totally unlike the real object, which is the cause of the sense appearance." But one is forced to protest that by "appearances," Hobbes does not mean what "state of consciousness, having no existence outside the mind" means for us. "Appearances" for Hobbes are related to the real thing as the image in the mirror to the object mirrored; they do not imply an order of existences of a nature radically different from the objects of which they are the appearances. They are existences, effects, of precisely the same nature as the "real thing."

The image is thus related to the object as effect to cause, as an echo to the sounding body, or as a reflection in a mirror to the source from which ether vibrations spring. Now the question may here be raised: Are not images, these echoes and reflections, *equivalent* to states of consciousness? The answer must obviously depend upon what is the precise meaning here ascribed to "states of consciousness." If we define the phrase as denoting simply *what we are aware of* in the operations of sense, and mean literally that, with no implied reservations and considerations concerning the status of things "in consciousness," or "dependent for their existence or for their being experienced on consciousness," or "having their existence only in the mind"

[35] *English Philosophers and Schools of Philosophy*, pp. 61–62.

—in short, if the phrase be emptied of all so-called subjectivistic implications, Hobbes's phantasms are states of consciousness. But it is essential that all these qualifications be made. It is easy to imagine that, were Hobbes asked what we are aware of in perception, he would regard the question as rather stupid, since every man possessing vision saw colors, and having ears heard sounds—in other words, was aware of images, echoes, reflections, phantasms. If states of consciousness are simply what we are aware of, Hobbes would regard it as trifling to ask if what we are aware of are states of consciousness. On the other hand, had Hobbes been asked if phantasms were "subjective," if they were dependent for their existence on consciousness, or the soul, or the mind; or had he been asked if the nature of phantasms was altered by the fact that some consciousness was aware of them, he would have been sorely puzzled to discover what the question was about. He would probably have looked upon it as on a par with asking if the image in the mirror were altered by the mirroring. Not to labor the point further, we may conclude that such questions almost unavoidably inject into Hobbes's doctrine elements not merely foreign to it, but beyond the ken of its author. The questions as to the adequateness to-day of Hobbes's psychology of perception, of the relation of that psychology to present-day positions, and of whether we should hold that Hobbes's phantasm is all that "state of consciousness" should signify, are very different from the question of what Hobbes did mean to say.

If by "mind," in the statement quoted, Seth intends the subject of sense in Hobbes's meaning of the term, then it is true that appearances have no existence outside the mind itself—but then they are not "states of consciousness." For the subject of sense Hobbes does not call mind or soul or consciousness, but "*some living creature*"—and this is a significant fact. Hobbes's phantasms are what he calls

them, store of experience. The manifold of experience is this store of phantasms. It is for Hobbes what the sequence of states of consciousness is for the modern subjectivist. Hobbes's manifold of experience are states of a living creature, phenomena of motion, but the series of states of consciousness, as the phrase is generally used in later subjectivistic thought, implies a group of conceptions and distinctions which simply did not exist for Hobbes. It is even unfair to Hobbes to say that his store of phantasms is identical with the sequence of physiological processes or neuroses which in most modern psychology is regarded as paralleling a very dissimilar sequence of psychical states. It is unfair because it tends to represent Hobbes as reacting against a distinction in orders of existence and as erasing the whole world of the "psychical" in order to maintain the sufficiency of the world of the "physical." The point on which too much insistence can hardly be laid, however, is that such a picture of Hobbes is unhistorical, not founded on Hobbes's own words, and that, therefore, the questions that we have been considering are irrelevant.

The trouble, to repeat, is that subjectivity and objectivity, consciousness, mental states, psychical existences, and the like elements of later psychological and epistemological instruments of terminology are completely beyond the sphere of Hobbes's thought. The appearances and the real objects can not be subsumed under these categories. They belong to the one order of existents. The unlikeness of one to the other is simply the unlikeness of one motion to another, of object to reflected image, and not the unlikeness of a "subjective conscious state" to an "objective real object."

When we inquire concerning Hobbes's position with reference to the cognitive correspondence of idea and thing, we are in danger of forcing his thought into channels foreign to it, if we seek to compel an answer. The danger lies in

assuming that the *cognitive* correspondence of idea and thing is at the same time a psychophysical correlation of idea as psychical state with a physiological state (and since the latter is the effect of an extra-organic physical cause, the correlation extends to that of psychical state and physical object). It is this confusion which is at the bottom of Seth's misinterpretation considered above. In forcing this meaning upon Hobbes, we should be introducing surreptitiously that very dualism of substances which he has explicitly repudiated.

In terms of Hobbes's psychology, there is no such thing as correlation of psychical idea with object, since there is nothing that is psychical or spiritual or "mental" in this sense of the term. From the psychological standpoint, the only correspondence that exists is that of effects to causes. But from the standpoint of knowledge, this relation of cause and effect is the basis of a *cognitive* correspondence. The experience of the effects affords the opportunity for knowledge of the causes. Therefore, in raising the question of the cognitive correspondence of idea and thing, we are inquiring how Hobbes uses the physical effects in the sentient, that is, the phantasms, in order to arrive at a knowledge of objects, that is, of causes.

Now the mere possession of images is not, according to Hobbes, in itself knowledge. Image-phantasms are more accurately regarded as the occasions and opportunities for cognition than actual cases of knowing. Images afford a certain guidance to the sentient organism in its activities, but are not in themselves knowledge. As physical effects in the all-embracing system of nature, phantasms and images are part of the subject-matter of inquiry rather than the knowing itself. Real knowledge depends on the consistent use of the terms of discourse, and ratiocination is computation involving such consistent manipulation of terms. But the terms must be connected up with objects

(which are really causes in the dynamic system of nature) in a scheme of definite correspondence. This is secured through the instrumentality of the image-phantasms.

Now the image-phantasms which make up experience are as varied as their outside causes. The possession of certain phantasms leads to the adoption of a name as a sign of the causes of the phantasm-effects. Thus, as in the illustration cited above, the term "sun" will signify the extra-organic cause of the intra-organic state or phantasm, "sun-being-the-size-of-a-dish," and of experiences of a similar nature. The "real sun, which creates these fancies" is the cognitive correlate of the term "sun" which is adopted in order to connect the "diversity of fancy" or phantasms with the "real sun." Through the use of names as signs associated with a given group or kind of phantasms, we are able to discriminate and distinguish the external causes. Thus the cognitive function of phantasms resides not so much in the images themselves (for the image in and by itself is not knowing) as in their capacity to be indices of the extra-organic causes, and in fixation of this causal reference by means of names. The names once fixed, agreed upon, and their reference maintained, ratiocination, or computation by means of names, furnishes knowledge.

It is clear, therefore, that the doctrine of cognitive correspondence in Hobbes is far from possessing any implications of psychophysical dualism. The correspondence, to repeat, is based on the relation of cause and effect. And both cause and effect are of the same order of existence, physical changes in a mechanical system. The similarity of idea (phantasm) and object is a similarity of cause and effect and a completed science of nature would contain an exhaustive account of "psychological" process.

ALBERT G. A. BALZ

TRUTH AND ERROR IN DESCARTES

The principles of Descartes's theory of knowledge may be understood from either of two points of view. On the one hand, it becomes quite clear that most of the doctrines are the natural results of the previously formulated physical and physiological theories. That is, the epistemology may be regarded as a logical restatement of the content of the accomplished scientific formulations. On the other hand, it is possible to look upon it as originating in the attempt to bring these scientific achievements within the scope of a set of preëxisting postulates concerning the relation of thought and reality. In this case, the task is to discover what are the fundamental presuppositions underlying the account of knowledge, what difficulties are the results of these, and what actual aspects of thinking Descartes is referring to in his statements.

The latter is the angle from which this paper will approach the problem. Historical relationships both to those who came before and to those who followed after will be neglected, although the temptation is great to show that much of Spinoza's work rested on latent Cartesian presuppositions. For the present, however, the internal structure of the Cartesian system will be our sole concern. And as a starting-point, we shall use the *Rules for the Direction of Mind*, for this is the earliest of the philosophical treatises and contains in an implicit way the tenets which bring about the difficulties which most of the later writings were attempting to solve.

The basic principle in the Cartesian system is the theory of the nature of truth. Reality has a determinate, unchanging structure, and the task of thought is to find it. It makes little difference whether we look upon the activity of thought

as in some way directed to setting up a mental copy, idea, or judgment of the objective world, or as immediately grasping the content of the same. In either case reality is there, once and for all, and knowledge must in some way attain it. Truth, then, is the relation which arises when thought has actually got hold of the nature of this static universe. Whether this condition be described as copying or intuiting, the definition of the truth relation is in essence the same, standing in contrast to any account which would regard it as consisting in the realization of certain anticipated experiences, or any form of control.

We appeal to the writings to show that our account of the matter is correct, and we find that we are chiefly embarrassed by the quantity of evidence. In the *Rules*, the phrase constantly used in describing knowledge is the intuiting or beholding of simple natures or essences, which are of course the truths of mathematics. The background for this must be sought in the Aristotelian tradition. A more specifically copy theory is indicated in the later works. In the *Discourse* we read, "But I have also observed certain laws which God has so established in Nature, and of which he has imprinted such ideas on our minds, that, after having reflected sufficiently," *etc.* In the *Meditations* (III) we find, "Now as to what concerns ideas, if we consider them only in themselves, and *do not relate them to anything else beyond themselves*, they can not properly speaking be false." "These two ideas can not, indeed, both resemble the same sun, and reason makes me believe that the one which seems to have originated directly from the sun itself, is the one which is most dissimilar to it." The doctrine of the objective reality of ideas is exactly in line with this whole view. The objective reality is just the idea's function as representing a reality beyond itself, or as Descartes puts it, "Hence the idea of the sun will be the sun itself, existing in the mind, not indeed formally, as it exists in the sky, but objectively, *i. e.*, in the

way in which objects are wont to exist in the mind." It should be noted that there are two kinds of reality cited, the world of perception, *i. e.*, of existences, and the world of essences or eternal and immutable natures. But in any case, the truth relation is the same.

So far, we have established that the Cartesian view of the *nature or definition* of truth is that it is a grasping of the character of a completely determined reality, either through copying or intuiting. We come now to the next point in the *Rules*, the *criterion* of truth, the self-evidence or clearness and distinctness of a proposition. The definition of truth and the criterion of truth in the Cartesian system should not be confused. The former is concerned with what it means to say that a proposition is true, the latter with how it is known to be so in any particular case. And the self-evidence of ideas does not as such make them valid, as is proved by Descartes's statements in the *Meditations* that he might possibly be deceived in those matters of which he was most certain. The same thing comes out in his replies to Gassendi, who attacks this point. If self-evidence as such constituted truth, such errors would, of course, be impossible. It is then merely the mark by which propositions, true in virtue of their mirroring of reality, can be known to be such. This applies directly, of course, only to the simple propositions or natures from which all others are deduced, the truth of the latter being guaranteed by that of the former. This situation contributes much to the problems of the later works. To understand this, we must first comprehend clearly the meaning of the terms employed. The simplicity which is spoken of here is plainly simplicity from the view-point of knowledge, not of psychological analysis. There are, then, certain truths which make the further acquisitions of truth a possibility. To modern logic this can mean only one thing, the successful hypothesis. This is simple, because it brings the big, varied, uncoordinated

mass of perceptual data into an ordered whole. The mind instead of being confronted with a lot of apparently unrelated facts, comes to see them as parts of one system, to substitute a unifying meaning for a chaotic manyness of experience. In this sense, we can speak of simplicity for knowledge or for logic. Those which are absolutely simple would then from this view-point be those hypotheses which are comprehensive enough or which are formulated with regard to a sufficiently wide field of data, to enable the problems to be attacked successfully. Such absolute simplicity is, of course, relative. Again, the successful hypothesis is clear in the sense that it works, that we see at present no reason to doubt its validity. In these terms, then, we can comprehend Descartes's description of his simple natures which are, of course, those laws of motion and propositions of mathematics which he had found to be highly adequate means of attacking the intricacies of optics, astronomy, the phenomena of storms, *etc.*

But this is not what Descartes says in his own analysis. For him to be simple for knowledge, means to be a proposition from which others may be deduced, but which itself does not follow from any other universal truth. And to be clear means to be self-evident, not in the sense of being at present unquestioned, but permanently unquestionable. The adoption of this criterion is necessitated by the theory of truth and the later metaphysical doctrines are to be regarded as an attempt to validate this course. To be true means to copy reality (if we may use the word copy as a convenient term to describe the general position already discussed). Therefore, if an hypothesis is true, it can not be altered, and conversely, any hypothesis which is subsequently altered or abandoned, never was true. Whatever is true, must be once and for all established. Any criterion of truth then must be such as to guarantee this unchanging character, for a criterion which would leave open the possi-

bility that what is now validated by its authority should by the same authority be subject to later revision or rejection would be incompatible with the implications of the definition of the truth.

Prepositions can not, therefore, be regarded as established by virtue of the fact that they work, that they agree with experience or experimental observation. For experience is, at least potentially, a changing quantity. The last bit of it is never all in, and what this last bit may do to the best hypotheses, can never be known. Descartes lived in an age when the constantly increasing wealth of experimental observations must have made him keenly conscious of the fact that these often call for revision and he has left us more than one passage referring to this. For instance, in the *Rules* we find, "This achieved, he can boldly assert that he has discovered the real nature of the magnet in so far as human intelligence and the given experimental observations can supply him with knowledge." But truth demands unchanging propositions. These we get in a deductive system. But a deductive system always goes back to certain primary truths. If then, science is to be possible from the Cartesian point of view, we must have a criterion which will absolutely guarantee certain fundamental propositions, propositions that we know will stay put in a way which no success in dealing with the immediate can ever indicate to us. Secondly, these truths must be capable of explaining all the problems of science, of dealing with all experience as it comes in. Two reasons can be given for this. On the one hand, Descartes had been eminently successful in dealing with nature in terms of matter and motion, and this fact had to be accounted for in his logical theory. On the other hand, if we are to have any scientific certainty, it must be because we apply to the explanation of phenomena the immutable principles, *i. e.*, that we deduce the latter from the former. We must guarantee that the world is of such a

kind that the principles of mathematics and the laws of motion can deal with it, that its essence is such that a mechanistic conception can grapple with it. Thirdly, since only a few principles can ever be directly established by deduction from the primary truths, we must have a criterion which will establish not only the latter, but all supplementary hypotheses which are found to be necessary in the work of explaining the given. Not specific laws, but a general infallible criterion of truth must be established. In other words, we finally reach a stage where the change in hypotheses which seems to be admitted as fact in the above quotation, becomes impossible under the consequences of the view of truth adopted.

But here another question arises. Suppose we find such a guarantee of the validity of hypotheses. How then can we ever err, since the characteristics according to which truth is to be known, must be such that they have always been more or less unconsciously applied? Or how can it be that men whose theories fulfilled the requirements of validity were mistaken? And behold we have the whole problem of error on our hands as the direct result of our having tried to grapple with the problem of truth on the basis of a copy view of its nature.

This is where the matter rests at the end of the *Rules*. Not, of course, that these difficulties are explicitly recognized, but they are implicit in the fundamental positions, and the subsequent works are engaged in answering just the questions which arise in consequence of these formulations. In fact, Descartes feels this keenly, as he says in the *Discourse* that he must turn to philosophy to aid him in solving his difficulties. This is what so often happens. Philosophy becomes a method of establishing truths which by a *tour de force* will help one out of the dilemma of a fallacious logic.

Philosophy then is the remedy for the difficulties of the copy theory of knowledge, of truths eternal and immutable,

which scorn the status of postulates or working hypotheses, rendered true by their successful control of experience. And the first thing philosophy finds on its hands is doubt. This doubt is no make-believe. What guarantee is there that even the most self-evident judgment actually copies reality? None whatsoever—unless, we can get a God to assure us that it does. But in so doing we must start from a brute fact, namely, that of my own existence. Our whole rationalistic system of immutable truths starts from a particular and contingent fact. And from this we proceed by the use of the clear and distinct principle of causation to establish the existence of God who is to vouch for the truth of such clear and distinct principles. This is a perfect circle. It is generally contended that God for Descartes is an ontological principle, a device for establishing the existence of an external physical world. But really the hypothesis is epistemological, as he himself recognizes when he says, "but I also remark that the certainty of all other things depends on it (*i. e.*, existence of God) so absolutely, that without this knowledge it is impossible ever to know anything perfectly." Again, "And so I very clearly recognize that the certainty of truth of all knowledge depends alone on the knowledge of the true God."

This established, Descartes has a free hand for assuming the truth of all things which are clear and distinct. These may be divided into two classes, those which possess this quality in their own right, such as the principles of mathematics and logic, and those which are deduced from the nature of God, such as the laws of motion. All of these comprise the so-called 'causes'. They are truths of reason and do not depend on experience in any way for *their validity*. But this does not mean that mathematics is innate in the sense that Locke took it to mean when he speaks of babes and madmen. Nor did Descartes imply that contemplation of God's essence suggested to him the laws of motion. All

knowledge arises in the presence of experience, but the validity of some of it is guaranteed as no experience could guarantee it. We quote, "Thus in teaching a child the elements of geometry, we shall certainly not make him understand the general truth that when equals are taken from equals the remainders are equal, or that the whole is greater than the parts; unless by showing him examples in particular cases." "Hence, when first in infancy we see a triangular figure depicted on paper, this figure can not show us how a real triangle ought to be conceived, in the way in which geometricians consider it, because the true triangle is contained in this figure just as the statue of Mercury is contained in a rough block of wood. But because we already possess within us the idea of a true triangle, and it can be more easily conceived by our mind than the more complex figure of the triangle drawn on paper, we, therefore, when we see that composite figure, apprehend not it itself, but rather the authentic triangle." Again, "Finally when I say that an idea is innate in us—I do not mean that it is always present to us. This would make no idea innate. I mean merely that we possess the faculty of summoning up this idea." In a discussion of that most innate of all innate ideas, the concept of God, the following statement appears, "The error of this assertion we shall the more readily realize if we reflect that anything can be said to be the outcome of another, either because this other is its proximate and primary cause, without which it could not exist, or only because it is a remote and accidental cause which certainly gives the primary cause occasion to produce its effect at one time rather than at another. There is no doubt that tradition or observation (*i. e.*, experience) is a remote cause, inviting us to bethink ourselves of the idea which we may have of God, and to present it vividly to our thought."

Thus we see that Descartes does not mean that ideas are innate in the sense that they do not arise in experience.

He himself knew clearly that his laws of motion had been formulated as a result of his physical experiments. But the ideas are innate or are independent of experience, in the sense that the mind itself is the active agent in formulating such propositions under certain conditions (in the way which the empiricist forgot) and that they must inevitably be true, either because they are clear and distinct or because they follow from others which possess these properties. "By innate ideas I never understood anything other than that which he himself—affirms—to be true, *viz.*, that 'there is innate in us by nature a potentiality by which we know God'." In other words the Cartesian innate ideas are similar to Kant's *a priori* knowledge in the sense that they are the concepts that our mind forms in the presence of the world of experience and that they are true independently of any guarantee furnished by experience. And the adopting of such a view is more or less inevitable on the basis of the copy theory of truth. For the latter renders it inconceivable that these ideas should be regarded as postulates or working hypotheses, the truth of which is based on their consequences for practice.

There is, however, one great point of difference between the eternal truths of mathematics and logic, and the so-called laws of nature, *i. e.*, the laws of motion. Although experience suggests the former, they are completely independent of it from the standpoint of validity. But not so the principles of physics just mentioned. There always remains a certain aspect of contingency, a certain amount of givenness which can never be absorbed by the reason. For motion is among the data of sense. That it exists is a mere psychological fact. Descartes recognizes this implicitly, in that he constantly enumerates it along with the things perceived by sense. "And in regard to the ideas of corporeal objects—magnitude or extension in length, breadth or depth I do so perceive; also figure, which results from a termina-

tion of this extension, the situation which bodies of different figures preserve in relation to one another; and motion or change of situation; to which we add substance, duration, and number. As to other things such as light, color, *etc.*" "For inasmuch as we perceive, or rather are stimulated by sense to apprehend clearly and distinctly a matter which is extended in length, breadth, and depth, the various parts of which have various figures, motions, *etc.*" "Nothing is known of external effects by senses but their figure, extension, and motion." Waiving for a moment the question of what the clearness and distinctness mentioned stand for, we can see that for Descartes, that the world has extension and motion in it is a mere brute fact which no rationalistic formulation can get around. But what is true of them can be shown to be necessary. Nor is this a trifling truism, for a thoroughly consistent rationalism should have shown not only that, God being as He is, the quantity of motion is constant, but also that motion itself is necessarily a constituent of the world, or changing from the ontological to the epistemological view-point, the idea of God should rigorously imply the idea of motion, which it does not.

This leads naturally to the question of the status of sense knowledge in Descartes. We have seen how, in the effort to get truth, he was driven to get some guarantee beyond experience for the hypotheses which he had successfully employed. What is then the position of sense perception, or the perception of concrete facts in his system? It is well known that there are many attacks on the reliability of sense in his writings. When we try to get at the meaning of these, we find the following. The contradictory and irrational character of perceptual experience has made a great impression on Descartes. Moreover, the conflict between the world as it is for common sense and the world as it is for science has been borne in on him. On the other hand, he knows perfectly well that knowledge without experimental

data is impossible. He can not found any scientific truths except the laws of motion on the essence of God, and is being constantly driven to new hypotheses in his effort to explain phenomena, which hypotheses are true just in so far as they accomplish this, as he himself admits. Sense is necessary, but misleading. But it is misleading only in so far as the diverse observations are not interpreted in terms of generally successful hypotheses, in so far as meanings are based on isolated data and not on a varied fund of perceptions. Witness the case of size of distant objects. What a later age would have spoken of as the necessary presence of unifying principles in all knowledge, is what Descartes is driving at, or perhaps one had better say, the necessary presence of his own useful laws of motion and principles of mathematics. For it is chiefly against the interpretations acquired in early life or from ignorant masters that he declaims. But astronomical, *i. e.*, mathematical reasoning, gives us the true idea of the sun. It is then against unreflective and inadequately reflective experience that Descartes is manoeuvering. The value of observation as such is not only not denied, but expressly maintained. The same thing comes out in the discussion of the perception of wax in *Meditation* II. The wax is perceived not by 'an act of vision nor of touch, *etc.*', but by 'an intuition of the mind'. The next paragraph, however, makes it clear that this does not mean that Descartes is denying the value of the sense data, but that the evaluating of the different factors, the judgment that the persistence of a certain aspect of extension is sufficient to constitute it the same object, this is a matter of mental activity, and is carried out as the result of previous formulations as to the nature of identity. We perceive by a mental intuition, because the present data are interpreted in view of general principles which have stood the test. Descartes would have said that the principles were clear and distinct.

This view of the status both of the principles and of sense knowledge fits in with what Descartes says in explanation of his method of deducing effects from causes. This is not, of course, a method of discovery in the sense of arriving at new truths by developing the implications of those established without appeal to experience. That would certainly be the ideal, we see from the statement in the *Principles*, "Perspicuum est optimam philosophandi viam nos sequnturos, si, ex ipsius Dei cognitione, rerum ab eo creatarum explicationem inducere conemus, ut ita scientiam perfectissimam quae est effectam per causas acquiremus." But this is quite impossible. Therefore we always appeal to experience for a description of the principal phenomena, "of which I am seeking the causes, not in order by this to acquire evidence which serves to prove what I have to say hereafter; for I intend to explain the effects by their causes, and not the causes by their effects; but in order to choose, among the great number of effects which could be deduced from the same cause, those we should principally attempt to deduce." In other words, we experiment to see how to interpret nature according to Cartesian principles, and both the principles and sense are necessary.

We are now in a position to understand Descartes's statements concerning the essence of matter and his argument for the existence of an external world. Driven by his conception of truth, the philosopher has finally succeeded in establishing the validity of mathematics and mechanics, without resting them on the nature of experience. But this only shifts the point of the dilemma. If these are true, what guarantee have we that all the problems of the physical sciences can be solved in their terms? For the assumption that such is the case is omnipresent. In the *Rules* we read, "Consequently when, in conformity with the previous rule, we have freed this problem from any reference to a particular subject, we shall discover that all we have to deal with consists

of magnitudes in general." In the *Discourse* the following passage indicates the same thought: "After that I considered what were the primary and most ordinary effects which might be deduced from these causes; and it seems to me that in this way I discovered, *etc.* . . . In subsequently passing over in my mind all the objects which have ever been presented to my senses, I can truly venture to say that I have not there observed anything which I could not easily explain by the principles which I had discovered." Even when supplementary hypotheses are needed they must be of such a kind as to facilitate the application of these principles to the phenomena of experience. This Descartes says in the *Principles*, "And certainly if the principles (*i.e.*, supplementary hypotheses) which I employ are *based in the evidence of mathematics*, and if what I deduce from them accords exactly with all experiences. . . ." But what surety is there that such a method of procedure will be universally successful? And it must be; otherwise, since truth is permanent, we will have no unalterable bed-rock from which to proceed, as these are the only propositions absolutely established.

The difficulty would be completely solved, if it could be shown that the essence of our world of sense phenomena consists in just those aspects with which mathematics and mechanics can deal. The real basis for the distinction between mind and matter lies in the fact that those phases of experience which we speak of as the world of sense objects have been successfully attacked in those terms, while thinking, *etc.*, seem quite unsusceptible of any such analysis. But sense shows many things besides extension and motion. *Ergo*, to be sure that this whole realm of experience can be dealt with by Cartesian hypotheses, it is necessary to show that it is ultimately statable in terms of extension and motion. The latter then become clear, while sounds, colors, *etc.*, are confused. When we inquire what this clearness and distinctness mean, we find the following statement in the

Principles: "Yet if he investigates what is represented to him by this sensation of color or pain appearing as they do to exist in a colored body or suffering part, he will find that he is really ignorant of it." *Principle* LXIX, "That we know magnitude, figure, *etc.*, quite differently from colour and pain, *etc.* This will be more especially evident if we consider, *etc.*" From this the difference between the clearness and distinctness of extension and motion and the obscurity of other sense data, consists in the fact that we know propositions about geometry and motion, not about color. As Descartes says, "And now that I know Him, I have the means of acquiring a perfect knowledge of an infinitude of things, not only of those which relate to God Himself, and other intellectual matters, but also of those which pertain to corporeal nature in so far as it is the object of pure mathematics." Let us put it this way. If the essence of things is extension, and motion a mode of it, Descartes can be sure that his method of work will always be successful. And since the only truths which can be regarded as established are those utilized in this method, we must either be certain that they will be applicable, or fall back on hypotheses grounded merely on experience, and face the consequent difficulties. As a matter of fact the only assurance possible for this whole point of view that our knowledge about anything is valid lies in the fact that that knowledge is statable in terms of the fixed principles, even supplementary hypotheses being regarded as established in so far as they facilitate such a statement, as we saw above. The use of clarity and distinctness to establish the desired status is a mere *tour de force*, for it comes to saying, that since, if the world is extension and motion it can be known, it must therefore be extension and motion, which is all right for a pragmatist, but unwarranted for an absolutist.

If Descartes had conceived of his fundamental principles as methods of dealing with experience, and not as copies of

reality, he would never have been forced to his metaphysical dualism and the representative theory of perception. But if things are to be known in terms of extension and motion, they must be extension and motion. For what they are known as, duplicates what they are. But the sensory flux obviously contains many items which are not either of these factors. For immediate experience colors, sounds, *etc.*, bear no resemblance to the objects of pure mathematics. *Ergo*, their real nature must be behind what they are for experience, beyond what they are for sense. Apart from their status from the point of view of the percipient individual, there is what they are in themselves. The dualism of the subjective and objective aspects of experience breaks out. What the object is for knowledge becomes an entity, opposed to the entity which falsifies this character through perceptions. And behold we have two substances, mind and matter. When we regard the principles in terms of which we know, not as copies of reality, but as working tools, or means to knowledge, this whole antithesis between real and apparent dies out, for it is simply meaningless. But once start from the former view-point, and it is inevitable.

The logic which brings metaphysical dualism, brings as its accompaniment representative perception. Instead of seeing in sense experience the material by which we check up our theoretical formulations, in other words, the foundations and termini of thinking, Descartes is forced to consider it as itself cognitive, as a means of becoming aware of something lying behind it. If light is ultimately matter in motion, our visual sensations are representation in our sensibility of the true reality. As has been pointed out in the previous paragraph, this is the result of the definition of truth adopted. Sensations even become true or false, as in the *Meditation* III, in so far as what they represent is something or a mere privation of something. Of course when attacked, Descartes says they are true or false only in so far as they

furnish misleading evidence for judgment, but he is constantly falling back again to his former view.

Thus far we have seen how Descartes, starting from the copy theory of truth, is driven to the hypothesis of God to guarantee the essences of mathematics, and the laws of motion, which are laws of nature, or of the existing world. These entail the Cartesian doctrine of the *res extensa* and of representative perception. But it is quite obvious to Descartes himself that these principles are not sufficient in themselves to know the concrete world of experience. An endless number of supplementary hypotheses is necessary. The best illustrations of their history are found in the *Dioptrique*, the *Meteors*, and the *Principles*. In the *Dioptrique* we read, "Et ie croy qu'il suffirra que ie me serve de deus ou trois comparaisons qui aydent a la concevoir en la façon qui me semble le plus commode, pour expliquer toutes celles de ses propriétés que l'expérience nous fait connoître, pour déduire en suites toutes les autres qui ne peuvent pas si aysément être remarquées, imitant en ceci les astronomes qui, bien que leurs suppositions soyent presque toutes fausses ou uncertaines toutefois, à cause qu'elles se rapportent à diverses observations qu'ils ont faites, ne laissent pas d'en tirer plusieurs conséquences très vrayes et très assurées". At first, then, these hypotheses are merely convenient as modes of conceiving things. Descartes says exactly what modern logicians say concerning their rôle in the total knowledge activity; they synthesize existing data and lead to the discovery of new. But they can not establish their truth, for to be true is to copy the world, and how do we know they so copy it. But before the end of the essay, these convenient ways of conceiving the matter have come to be truths. "Mais afin que vous ne pouissiez aucunement douter que la vision se face ainsi que ie l'ai expliqué, ie vous veux faire encore icy considérer les raisons pour quoi il arrive quelque fois qu'elle nous trompe."

Here the truth of the doctrines in question is to be tested by the fact that they can explain the experiential fact of error, a purely pragmatic test. But as we saw earlier, such an assurance on the basis of ability to deal with experience will not do. There is only one alternative. Even these hypotheses which can not be deduced from God must be clear and distinct, and, *ergo*, guaranteed by God. As we said earlier, the at present unquestioned, must become the permanently unquestionable. And this on all scientific questions. Thus in the *Principles*, Descartes speaks at first of suppositions. But shortly we get the following passage, part of which was quoted earlier, "And certainly, if the principles of which I make use are very self-evident, if the consequences which I develop from them are based on the evidence of mathematics, and if what I deduce from them accords exactly with all experience, it appears to me that it would be an injustice to God to consider that the causes of the effects in nature, and which we have thus found, are false; for that would be to wish to make him to blame for having created us so imperfect, that we were subject to error, even when we use well the reason he has given us." The matter ends with a more or less direct assertion that these principles are true, for Descartes speaks of them as "*les vrayes causes.*"

Descartes has now established truth with a vengeance. Anything that seems certain is true. Of course, he is constantly repudiating this position, but he can never get around it. Error should be ultimately impossible, provided we never go beyond what is clearly perceived. As a matter of fact, Descartes is convinced that this is so. It is the very keynote of his whole emphasis on method that by this means error shall be obliterated. In *Rule* III we read, "Moreover, by a method I mean certain and simple rules, such that if a man observes them accurately, he shall never assume what is false as true," *etc.* Also *Principle* VI of Part I of the *Prin-*

ciples reads, "But meanwhile whoever turns out to have created us, and even if he should prove to be all-powerful and deceitful, we still experience a freedom through which we may abstain from accepting as true and indisputable those things of which we have not certain knowledge, and thus obviate our ever being deceived." What this finally comes to, as we saw, is that the knowledge of God assures us that all successful hypotheses are valid. But error is a fact. There remains but one way out. The intellect never errs. Whatever falsehood there is, is due to the will which goes beyond what is clear and distinct. For if the intellect once failed to differentiate truth from falsehood, there is no surety that it will ever be able to do so. No, intellect as intellect is infallible. As the mere capacity of recognizing the validity of propositions it must be infallible. It may not know whether a judgment is reliable, but it can never be mistaken about those which it sees to be so. It can never assent to falsehood, for this would be to admit that falsehood can be clear and distinct and throw us back into chaos. The immediate certainty that a thing must be, being our only assurance that it is, must be beyond suspicion. In Descartes's own words, "I, who by falsity understand only the privation of truth, am convinced that it is an absolute contradiction that the understanding should apprehend the false under the guise of the truth." The solicitude shown by Descartes in the *Meditation* IV, in his effort to exonerate God from any complicity in our mistakes, is due to the fact that to question God's goodness is to question the rock on which is built all our certainty that our judgments ever copy the world. It would be to relapse into the trouble from which the whole philosophy is an attempt to rescue us. But the will may assert things, regardless of whether we know them to be true or not, it may affirm where there is no intellectual assent.

There are two great difficulties in this effort of Descartes to rescue himself from the contradiction between the doc-

trine of the infallibility of man entailed by his philosophy and the existence of error. The first is the obvious fact that men have thought they perceived things with the greatest clearness and these have later been shown to be incorrect. Or, in other words, the most adequate hypotheses have been superseded. Gassendi calls attention to this fact in his set of objections, and demands a rule for distinguishing the truly self-evident from the apparently certain. For reply to which Descartes can only say that "it can never be proved they clearly and distinctly perceive what they pertinaciously affirm," referring to those who erroneously deem themselves to possess correct ideas about reality. Yet he himself later states that "it could easily be proved that you sometimes are wrong about those matters which you accept as certain." And in the *Meditation* IV he says he himself held certain things clear which he later gave up. In other words, the copy theory necessitates a criterion of truth other than fulfilment in experience, and then the presence of error shatters this test itself by showing that it has factually failed. And the upshot of it seems to be that that is true which is truly clear and distinct, which is tautology and surrender.

But even if this trouble did not exist, there would still be a dilemma to face. Error is a matter of the will. Immediately the question arises, what is the relation between the will and the intelligence. The trouble seems to be this: If the will is in no sense dependent on the intellect, what we have is complete chaos. There would never be any reason to hope that what we affirm or deny is right or wrong except by mere chance. For the only method by which we can hope to guide the blindness of conation is by thought. And if the former does not submit to such guidance, rational judgment on any subject is impossible, the correcting of error by better control, more information, profounder analysis, *etc.*, is unintelligible. For this reason Descartes is driven to assume the dependence of will on the understand-

ing. Otherwise clearness of conception would not entail correctness of judgment. "For in order that I should be free it is not necessary that I should be indifferent as to the choice of one or the other of two contraries, but, contrariwise, the more I lean to the one—whether I recognize clearly that the reasons of the good and true are to be found in it, or whether God so disposes my inward thought—the more freely do I choose and embrace it. And undoubtedly both divine grace and natural knowledge, far from diminishing my liberty, rather increase it and strengthen it. Hence this indifference which I feel, when I am not swayed to one side rather than to the other by lack of reason, is the lowest grade of liberty, and rather evinces a lack or negation of knowledge than a perfection of will; for if I always recognized clearly what was true and good, I should never have trouble in deliberating as to what good choice I should make, and then I should be entirely free without ever being indifferent."

But to admit this, is once again to fall into the dilemma as to how error is possible. For if the will can not help judging in accordance with the dictates of reason, the only place where error could arise would be where no intellectual conviction was present, unless the last quotation is mere tautology. But we can only err when we believe something false to be true. We quote Descartes, "When on the contrary the error consists in the very fact that it is not recognized by us as an error." In other words the absence of clear and distinct cognition would be equivalent to the absence of belief in the truth of the proposition, since if we believed it it would appear certain to us, and this would make error impossible. For to recognize the dubious character of a judgment, is to avoid a mistake. In other words, we sum up the whole situation as follows. The understanding can not err, since this would permanently remove our guarantee of truth. But if mistakes are due to the will

either we have a completely and permanently irrational conditional of human judgment entailed, or we attempt to remedy this by making the will dependent on the reason, which once more makes error impossible. Driven by the copy theory of truth, we must guarantee the validity of some things. But this guarantee turns about and guarantees the validity of all. To prove the truth of anything, we are driven to prove the truth of everything.

The matter of error can also be treated from the view-point of the scholastic phase of the Cartesian philosophy which we have more or less neglected in favor of that aspect which rests on his actual methodology of science. For there is a peculiar dualism in the term idea everywhere in Descartes. At one moment it means that act of mind by which we grasp the essences of the scholastics. Thus the idea of the triangle in *Meditation* V is the idea of an eternal nature. Again take the statement of *Principle* XIV, Part I, "That the existence of God may be rightly demonstrated from the fact that the necessity of his existence is comprehended in the conception which we have of him." Or best of all, "For the idea represents the essence of the thing, and if something is added to it or subtracted from it, it is forthwith the idea of something else . . . But after the idea of the true God is once conceived, the new perfections can be detected in it which had not previously been noticed; this does not cause any increase in that idea, but merely renders it more distinct and explicit, because they must all have been contained in the very same idea, since it is assumed to be true."[1] In other words our ideas are ideas of eternal verities as Gassendi calls them, and hence can not be false. Error in the intellect is impossible. This is undoubtedly the background of much of Descartes's insistence that clear and distinct ideas, *i. e.*, knowledge of essences can not be false. But the next moment the ideas are the ideas of individual knowers in

[1] Obj. V Replies.

their attempt to comprehend reality. This is necessary, for from such a view-point error is intelligible. It is no longer the soul comprehending the eternal ideas of Plato, but the struggling and finite searcher after information about the world that we are dealing with. The ideas are particular events in a particular knowledge situation, and as such may or may not be mistaken. Thus my idea of the sun derived from sense is false, *etc.* But if idea is to be taken in this sense, what certainty is there that any are true? And if their truth is in some cases self-evident, how is error possible since the absence of the self-evidence should be noted by the mind, since it is a mental fact?

We will summarize this analysis of the Cartesian epistemology briefly. The problems and results of Descartes's work may be regarded as being a direct development of his theory of truth. To be true means to grasp the content of a static and determinate reality. This calls for a criterion of truth other than compatibility with experience, for the latter might change, while truth can not. We thus arrive at the doctrine of clear and distinct ideas. In order to validate such ideas, the hypothesis of a God is invoked. After having established in this manner a number of fundamental truths, Descartes shows that these will be adequate to deal with all experience, by making extension the essence of things. The establishing of supplementary hypotheses to enable the fundamental principles to account for the given necessitates extending the criterion of truth to them also. As a result, whatever appears true at any time, now becomes permanently unquestionable. The difficulty involved for error in such a view is met by attributing the latter to the will, not the intellect, an attempted solution which is unsuccessful.

ROBERTS B. OWEN

SPINOZA'S PANTHEISTIC ARGUMENT

Spinoza's argument for the existence of God may be conveniently divided into five steps or stages:

1. The first is essentially ontological, though Spinoza does not repeat the ontological argument formally in either its Anselmic or its Cartesian form. It is more or less implicit, however, in several passages—as in *Proposition* VII, where it is claimed that "existence belongs to the nature of substance." Substance is defined objectively as "that which is in itself," and subjectively as "that of which a conception can be formed independently of any other conception" (*Definition* III). As such "substance can not be produced by anything external to itself" (*Proposition* VI cor.). "It must, therefore, be its own cause—that is, its essence necessarily involves existence, or existence belongs to its nature" (*Proposition* VII).

The reader of this passage doubtless has the idea of an absolute or self-existent somewhat. For this somewhat, our author, by rigorous specialization, provides the technical name 'substance'. From this idea he is expected to infer the actuality, or existence *in re*, of the alleged absolute; for, not being contingent, "its essence necessarily involves existence." In other words, why should it not be, since it depends upon nothing but itself? What is there to prevent?

The modern tough-minded retort, of course, is that the burden of proof is on the author. The real question is, What is there to warrant belief in this substance? Spinoza's answer virtually is, that it is the presence in the mind of a clear and distinct idea of substance that warrants and requires the belief. "For a person to say," he urges, "that he has a clear and distinct—that is, a true—idea of a substance, but that he is not sure whether such substance exists, would

be the same as if he said that he had a true idea, but was not sure whether or no it was false" (*Proposition* VIII, n. 2).

Manifestly for Spinoza the *positive* ground of belief in substance is the clear and distinct idea of it present in the mind, the self-existence and independence in the content of the idea being the *negative* warrant therefor. There is a difficulty, however, for the modern reader in getting the true force of this statement, for Hume and the modern psychologists have subtly transformed the meaning of 'idea' for us. To-day it is subjective, and stands for a specific mental *process*. For Spinoza it was necessarily objective. An idea was the representative (as copy or otherwise) in the individual's field of intellectual vision of the independent reality to which it referred. His clear and distinct, or 'adequate', idea must, therefore, be construed in logical terms only, not in psychological. It appears to be an idea which is objectively complete, coherent, self-consistent, and causally independent. Such ideas he holds to be self-validating. The mind inspects them and finds them worthy of approval, so to speak, because of their structure.

Of course, this conceptualist reasoning has lost its power for the modern mind. We have now no such confidence in the sovereign powers of reason, even on the critical side. But is there not a modern analogue of it in good standing which we can readily imagine Spinoza falling in with, had he but come to the view-point of the subjective idea? The much greater value which he accords to ideas that are 'adequate' at least suggests that he would have recognized the legitimacy of the subjective factor of intellectual need; and with that included his thought is susceptible of restatement in terms still valid. It is commonly maintained in opposition to the ontological argument that we can not pass from an idea to existence *in re*; but the statement seems over sweeping. Anselm and Descartes have ground for their claim that much depends upon the nature of the idea. How

many reflective men are destitute of belief in any kind of absolute whatever? I apprehend they are few. And the belief, when it exists, upon what is it based? Is it not *positively* on the appeal of the idea itself, the satisfaction that it gives to a need of the mind, and *negatively* on the content of that idea as involving absence of prevention? Why should one not believe in an absolute when there is nothing in its content to forbid, and when by means of it he can organize his experience more satisfactorily? It is much the same sort of logical process that, from Parmenides down, has convinced thinkers of the conservation of matter. Doubtless one can escape Spinoza's conclusion by taking to agnosticism; but that looks like an emotional reaction pure and simple. Again, it may be possible to think of an infinite regress without any substantial basis; but, if so, the idea evidently suffers greatly when compared as to clearness and distinctness with the concept of substance.

It may be said that to believe in a certain evidently possible existence upon the ground of its meeting a need of the mind is not the same as arguing to objective reality from a mere idea. Because the fool in the Bible had the idea of some sort of God is no logical confession on his part of that God's existence. I quite agree. Anselm, in his orthodox use of a Biblical text as a starting-point, seriously handicaps his argument. But there appears to be no ground for charging Spinoza with that sophistic, four-termed process of reasoning, often as it has characterized other ontological disputants. For him the intuition of substance is far from being a *mere* idea. Such an idea would to him be 'inadequate'—the product of passive-experience. On the contrary, the insight of substance is the result of the mind's *activity*, not passivity. It is 'adequate'. The concept of the absolute, in its most general form, is not an inference from any single experience, nor from any group of experiences, nor yet from any limited set of relations. It is the creation of

active reflection; and it owes its existence *in conceptu*, and its standing as probable existence *in re*, to the fact that it alone is *adequate* to the need of the mind as it seeks to organize *all* of its experience. For myself, I am quite disposed to follow Spinoza in this first step of his pantheistic argument.

2. I find myself a laggard, however, when he takes his second step, which appears in the theorem (*Proposition* V), that "there can not exist in the universe two or more substances having the same nature or attribute."

Are the terms 'nature' and 'attribute' in this statement equivalents or quasi-disjunctives? From the 'proof' it is plain that we are to regard them, at least objectively, as equivalents; for our assent is looked for on the simple ground, that, since substances are distinguished purely by their attributes, and not as with empirical modes, by differences in space and time, "it will be granted that there can not be more than one with an identical attribute." Assuredly it will be granted if 'attribute' is synonymous with 'nature'—that is, the sum of the essential properties—but not otherwise; nor can we see how Spinoza could expect us to 'grant' it on any other basis.

Yet attribute can not be altogether identical with nature, or there would be no sufficient excuse for its use. One distinction may confidently be found for it on the subjective side—to indicate the right source of real knowledge of substance, which is through intellectual intuition. In *Definition* IV we are told, "By *attribute* I mean that which the intellect perceives as constituting the essence of substance." It is reasonable to think that the emphasis in this statement is on the word 'intellect'. An attribute, he will have us believe, is a discovery of the 'active' reason, an 'adequate' idea, whereas a mere property appears through the windows of sense, and is 'inadequate'. This subjective justification of the term is supported, also, by the change in form of statement which occurs in this definition. In the first three

definitions the author expresses himself first in objective terms, and then independently in subjective, or epistemological terms; in the definition of attribute only the subjective form is used.

May we then infer that an attribute for Spinoza is really an *aspect* of substance—the way substance appears to intellectual intuition when looking, say, in a certain direction? That construction accords well with most, though not all, of our author's uses of the term, *provided* the aspect is considered as *objectively* true and not in any sense mere appearance. The phrase in the definition, "constituting the essence of substance," clearly requires this full objective validity. It does not require, however, that the intellect's perception of the essence should be exhaustive. This brings us to the real issue at this stage: Does Spinoza think of the *whole* essence as represented by an attribute, or only so much of it as the intellect is able to perceive from a given point of view? The proposition now under review (*Proposition* V) requires us to adopt the former alternative, because, as we have seen, it involves (objectively) the identification of nature and attribute. Without that identification the 'proof' is no proof, nor even an attempt at a proof.[1] On the other hand, the second explanation above evidently gives most meaning to the subjective distinction between essence and attribute, and is, indeed, apparently necessitated by Spinoza's more frequent use of the word and by his general metaphysical position. *Proposition* X, with its 'note', may be taken as an example. There the distinctness of the

[1] It may be objected that this judgment is too summary, since Spinoza might properly claim that a common attribute establishes a relation between any two alleged substances, and a relation involves some sort of dependence. But does it necessarily? That appears to depend upon the character of the relation. No doubt the statement is true of causal relations, but how is it with spatial ones, and with relations of similarity, as in the possession of a common characteristic? I quite fail to see that any dependence of one upon the other is even suggested by the fact that both matter and ether are extended. I concede that one *may* be a mode of the other, or that both may be modes of a third substance; but something more than their common spatiality is necessary to establish that interdependence.

attributes is dwelt upon, and—as a part of some very inconclusive reasoning, be it added—it is claimed that "it is the nature of substance that each of its attributes is conceived through itself, inasmuch as all the attributes it has have always existed simultaneously in it, and none could be produced by any other; but each expresses the reality or being of substance"—evidently not the whole of that being, however, or how could those attributes be distinct, simultaneous, and eternal? And what need would there be for more than one of them? Evidently for Spinoza there is (generally) a difference, and a difference in content, between the essence and the intellect's perception of it; and, if the perception is true, what can that difference be but the partial nature of the 'expression' contained in the attribute? The same idea of a partial and distinct disclosure of the essence by each of the attributes underlies the ensuing statement that in the case of every entity "its reality or being is in proportion to the number of its attributes," *etc.*; that is, the more attributes, the more being. Indeed, how could Spinoza regard his (Cartesian) 'extension' as a *full* expression of substance? Could anything be farther from his view of substance as boundlessly varied and fertile?

There is evidently an ambiguity in our author's use of the word attribute, a word so important to his metaphysical scheme. It is identical with 'nature' when he is trying to identify seemingly different things. Attribute must represent the whole nature then, for it would involve a manifest undistributed middle to infer identity of substance from a partial identity of nature. As well might a physicist conclude that all extended things—matter, electricity, ether, space, *etc.*, are one because they all have the common property of extension. On the other hand, when the philosopher is confronted by such clear and distinct intellectual intuitions as consciousness and extended existence, he is obliged to recognize that in the attributes only characteristic *parts*

of the essence of substance are expressed. Therewith, however, an attribute becomes only a special kind of property (or group of properties), one, that is, the cognitive vehicle of which is intellectual, and not sensory, intuition. His need of the word appears to lie in the stubborn fact that for a Cartesian *both* extension and consciousness are perceived by the intellect as realities, and realities so disparate as to frustrate all attempts to reduce them to a common denominator. Yet Spinoza has no mind to let them remain independent realities. He sets himself to force them together by *a priori* argument, and the ambiguous term attribute is his logical forceps for the operation. We have seen how at need it is made synonymous with nature; when, however, he wishes to exclude all substances but one from existence the term evidently stands for but a part or aspect of the nature. In *Proposition* XIV we find him arguing that "if any substance besides God were granted, it would have to be explained by some attribute of God [he could not claim this of the whole nature], and thus two substances with the same attribute would exist, which (by *Proposition* V) is absurd," *etc.* The final upshot is plain: if only one substance exists, then consciousness and extension *must* both inhere in it, and *must* somehow express the same essence. What now logic hath thus joined together, let not common sense put asunder!

The second step of the argument is thus an inconclusive attempt to limit conceivable absolutes to a single one in the field of each attribute. As yet the argument appears not to exclude Cartesian dualism, nor even pluralism.

3. The third step is the theorem that "substance is necessarily infinite" (*Proposition* VIII); and the demonstration is most suggestive. It is indirect, resting upon Spinoza's definition of finite, according to which a thing is finite "when it can be limited by another thing of the same nature." Evidently this is impossible in the case of sub-

stance; for the only possible limiting object being of the same nature would, as we have seen, be merely more of itself. Spinoza concludes that, therefore, "it does not exist as finite," but *must exist* "as infinite." Surely there is an illicit major in this reasoning. Let it be granted, as he will have it, that whatever "can be limited by another thing of the same nature" is finite, and that substance can not be so limited (a negative minor!); it does not follow that substance is not finite. Perchance some other sort of finites are not so limited, and these others may be the very finite substances which the author is trying to exclude.

A more interesting and significant thing about the argument, however, is the vast metaphysical assumption that if a substance is not limited by an agent beyond itself, it must needs be infinite, finiteness being something *imposed upon* existence from without by a confining object. In default of such restraint, any object will become infinite; that is, all things have the potency of infinity! In support of this view Spinoza appeals to ordinary reflective thought. "A body," he explains in *Definition* II, "is called finite, because we always conceive another greater body." Do we, indeed? I apprehend that that statement gauges in no small degree his relative nearness to the Middle Ages and the successors of Plotinus. Yet he had good precedent for his thought. Descartes seriously assures us that it was evident to him, that if he "had existed alone" he could of himself have "become infinite, eternal, immutable, omniscient, all-powerful," *etc.* But how, pray? is our natural, modern inquiry. By endless finite effort? Assuredly not; Descartes was a mathematician. Evidently it was to be looked for because of the infinite expansibility of existence as such when not externally shut in.

Nothing, perhaps, shows better how deeply seated this Neo-Platonic idea had become than the fact that even the revolutionary Kant employed it in his first antinomy of

pure reason, maintaining that to reason the physical world must be infinite, for if finite it would be limited only by empty space, which is nothing; "and, therefore, the world . . . *is* infinite in extension;" that is, from one of reason's points of view.

Kant's (and Fichte's) conception of 'freedom' as onward-flowing spontaneity suggests, though more guardedly, the same emanational idea. It may even be urged that the present-day physicist's thought of matter as essentially impulsive, and so inherently causative in a forceful sense, smacks of that idea. In this case, however, there is a difference, and an important one; for the physicist balances his affirmation of inherent potency with a strong assertion of determinate character. There are no boundless potencies for him, save in a rhetorical sense, for every existence has its limitations provided from within by its own perfectly definite constitution. This conception of inner control Spinoza appears to have lacked. Hard as is his determinism, it is rationalistic, not empirical; metaphysical rather than scientific. It arises from the requirements of his world-view rather than from the demand of the facts critically ascertained. His interest is not in getting knowledge of definite activities and amounts of potency, whereby to explain and predict and perhaps control the course of events, but in establishing the blindness of nature's impulses and processes, probably through reaction from his hereditary theism and free responsibility.

The change in attitude of the modern deterministic man of science, apart from his difference in interest, is no doubt largely due to Newton's discovery of universal gravitation, with the stress it seemed to lay upon internal control. Before that achievement the notion of external control was, no doubt, most plausible, if not inevitable.

One wonders also whether Spinoza's doctrine of potential infinity within the finite was not much buttressed by the

logical parallelism of reason and nature which he inherited from scholasticism—from Descartes, also, in the form of the objective validity of clear and distinct insights—and which evidently underlies his psychophysical parallelism. The roots of this long prevalent postulate are to be found apparently in the Greek exaggeration of sensory errors and preference for the reflective approach to reality, and in medieval conceptualism in which real being was again put nearer to reason than to sense. According to the resulting parallelism mental processes that are logically sound always have objective physical and metaphysical processes correspondent to them. Spinoza's statement of it is as follows: "That which is contained in the intellect in representation must necessarily be granted in nature" (*Proposition* 30). Now, thought does seem to have a kind of boundless expansibility, or potential infinity, when the field is clear; that is, when opposing thoughts are absent. Bruno, we recall, exulted in his ever-expanding, space-conquering power of conception; and even Hume is impressed by it. Why should not objective existence expand as readily?

It need hardly be said that we can not keep pace with Spinoza in his third step, with its affirmation that "substance is necessarily infinite."

4. We reach Spinoza's fourth argumentative stage in *Proposition* XI, which declares that "God, or substance, consisting of infinite attributes, of which each expresses eternal and infinite essentiality, necessarily exists." This theorem is generally construed to mean that the absolute has an infinite *number* of attributes, that is, is infinite in cross-section. Spinoza does not say that, however; the word number is lacking. May not 'infinite attributes' refer, not to their number, but to the extent of each in its own field, that is, as 'infinite after its kind'? So construed, Spinoza might be regarded as positing only the two attributes known to reason.

There are serious objections to this view. In the theorem he provides, separately and fully, in the ensuing clause for the infinity of each attribute after its kind, a clause which becomes mere tautology on the suggested rendering. In his definition of God, also, he lays stress upon God's *absolute* infinity, and adds, "not infinite after its kind: for of a thing infinite only after its kind infinite attributes may be denied" (*Definition* VI). In this explanation it is hard to doubt that by 'infinite attributes' and 'absolutely infinite' our author means an infinite *number* of attributes. In no other sense can infinity be 'denied' of a thing infinite after its kind. Furthermore, in *Proposition* IX the word number actually occurs, and the philosopher's real meaning is plain: "The more reality or being a thing has," he maintains, "the greater the number of its attributes." It would seem to follow inevitably that in a being 'absolutely infinite' (God), one containing "in its essence whatever expresses reality," the number of the attributes must be infinite.[2]

That there are, then, an infinite number of facets to the all-potent absolute is the chief additional thought at this fourth stage. Substance now, through the disclosed richness of its essence, becomes God. Now, this God, we are assured, "necessarily exists." If Spinoza had been asked whether the necessity was an objective one or a rational necessity on our part—that is, of affirming the divine existence—he would doubtless have answered that it was both. His parallelism of reason and nature would make that view inevitable.

Once more the proof of the theorem carries us back into an almost forgotten field of thought. "Of everything whatsoever,' runs the argument, "a cause or reason must be assigned, either for its existence or for its non-existence." "A thing necessarily exists," he adds a little later, "if no cause or reason be granted which prevents its existence." But what reason can be given for the non-existence of a substance

[2] *Cf.*, also, *Propositions* X, n, and XVI.

with infinite attributes? Is it an *external* reason? Then the opposing agency must either be, or come from, "another substance of another nature"—in which case it could not affect the substance in question at all—or it must come from a substance of the same nature. In the latter event it would only be the same substance in another guise, and so not an opposition *to* it, but an example of it! Is there then some *internal* reason why the substance in question (God) can not and does not exist? That would require conflict, that is, unreason and imperfection, in the nature of that which by definition is "absolutely infinite and supremely perfect;" which is a contradiction, and manifestly absurd. Hence, no cause or reason can be "assigned which would annul" [!] the existence of such substance: therefore, it necessarily exists.

A new word appears at this fourth stage, the word 'perfect'. What does Spinoza mean by 'supremely perfect'? What use for such a phrase has a thinker who denies all emotional processes and all moral qualities to God, and who seems himself to have had but little esthetic appreciation? It is significant that substance is conceived by him as perfect only after he has predicated of it infinity of being in extent and content—absolute fullness. Perfection appears to be for him a quantitative, not a qualitative matter. Thus, what we have presented for our acceptance is the *Ens Realissimum* of the scholastics, though now supported by a more rigorous *a priori* demonstration than was ever attempted before. And yet not precisely the *Ens Realissimum* either; for in that interesting scholastic creation the Neo-Platonic ἓν καὶ πᾶν is reenforced with a kind of sublimation of the God of the New Testament. It is assumed that, of course, the God of religion coincides with the One, or Source Absolute, of philosophy. The logic of Spinoza, however, has no place for this assumption. All religious connotations are stripped from the term God, and only the ἓν καὶ πᾶν remains, though now showing its tremendous fea-

tures through the mists of thought with a clearness that Plotinus never dreamed of. For both philosophers, however, all existence is good; it only needs to become quantitatively infinite to be perfect, perfection being simply fullness. Apparently, neither of them could conceive of anything more.

Now, as the Neo-Platonic conception of God is the dominant one in medieval philosophy, we do not appreciate the force of the ontological argument for able minds in that age —Anselm's, for example—until we allow for this quantitative notion of perfection. To 'tough-minded' moderns it is apt to be a mystery how philosophers could ever be so sure of the existence of perfection somewhere when experience so generally swears against the creed. The concept evidently belongs to the field of faith, not of reason, so long as *qualitative* perfection is thought of. It is otherwise when perfection is construed as fullness. Then there are empirical analogies, or at least suggestions—in the sunshine and its unfailing source, to fall back upon Plotinus; in the air, also (and sky?), to instance the more naïve thought of Anaximenes, *etc.* That is, quantitative perfection, though a lower conception, is intellectually an easier one than qualitative perfection.

Of course, there is no real cogency, no mental coercion, in this notion. It is a 'mere' idea, not an 'adequate' idea. Only of space and time do we feel a need to predicate endlessness. Anselm's most 'perfect' Being we do not *need* to think of at all. No doubt he is occasionally found 'in the understanding' of philosophers, but he is there as guest, not as permanent and inexpugnable tenant.

The assertion that for "everything whatsoever a cause or reason must be assigned for its existence, or for its nonexistence" recalls for us the brave old days of militant reason, when, picketing as it were the highways of possibility, she demanded with a sovereign air the credentials of

every passer, be it man or star or the universe itself. By what right do you exist? is the challenge Spinoza will put to "everything whatsoever"! We may admire his courage; but we can not, I think, concur when he maintains that a reason "must be assigned for [an object's] existence." Our need at that point is by no means such a crying one. As Martineau remarks, "It is not existence, as such, that demands a cause, but the coming into existence. . . . Causality is a law for phenomena, and not for entity."[1]

The curious claim that a reason must likewise be given for non-existence, that is, that the burden of proof or disproof is on the challenger, appears to be another case of the logical parallelism of thought and reality mentioned above, reenforced, it is to be suspected, by the common tendency to assume that every term in use has some objective existence corresponding to it. If clear and distinct ideas are indeed self-validating, it would seem that in their presence at least —Spinoza would say in the presence of his concept of God, for example—the burden of proof *is* on the challenger; that is, he must show by some reason, internal or external, that, when fully conceived, the ideas in question are not really clear and distinct intuitions after all.

Spinoza's conclusion that, though we know but two of the divine attributes, their number is really infinite, seems to be expansiveness run riot, the proof in the last analysis being that there is nothing to prevent! The modern reader finds it hard to take the claim seriously, and is apt to account it a scarcely seriously intended case of experience scorning, free-flying speculation. But that is far from its originator's feeling about it. He is very much in earnest, for it is a needful structural factor in the edifice of his pantheism. It supports his fifth and crowning principle, which is, that—

5. "Besides God no substance can be granted or conceived" (*Proposition* XIV). God is the only substance in

[1] *Types of Ethical Theory*, I. p. 302.

existence. This time we can not criticize the logic. If substances with an identical attribute are necessarily themselves identical, and if God possesses an infinite number of attributes, then assuredly any reputed other substance will have some attribute in common with God, and so will necessarily merely be God in another form or aspect. In step four God, through the infinite number of his attributes, is made to preempt the whole field of possible being, and vain indeed must be the attempt of any subsequent substantial pretender to jump his claim.

It remains to ask, in the light of what has been said, what Spinoza meant in the first stage—by describing substance as "its own cause."[4] In an earlier work,[5] as quoted by Martineau, he had condemned the notion of *causa sui*, on the ground that it required one to think regarding a thing, "that before it existed, it produced its existence, which is absurdity itself and impossible"—surely a very sensible criticism. How is it then that he afterward puts this conception at the very forefront of his ethics?[6] Evidently it has come to have new connotations for him. Apparently as the emanational world concept became dominant with him, questions of absolute origination ceased to have meaning. For him there were no longer any literally new things —only transformations of eternal things. But that transformation process is forever going on, and the many, the innumerable many, are always appearing in the One. Whence came the world of to-day? has no meaning, if absolute origination is meant. The question is childish; the world is eternal. But whence came the world of to-day in so far as it differs from the world of yesterday, and how do the multitude of determinate forms, the *natura naturata*, come out of the living oneness—these are questions of interest because of meaning. The answer is, that the world of to-day

[4] *Cf. Proposition* VII.
[5] *De Deo, etc.*, II, p. 17.
[6] *Cf. Definition* I.

is due to, or caused by, the world of yesterday, which in its essence—the *natura naturans*—does not change, but is eternal. Thus it is that God is perpetually *causa sui*—at once the eternal ἓν και παν to reason and the cosmic Proteus to sense.

To summarize: The leading metaphysical conception running through the argument appears to be that of an infinite potency in all existence which is constantly pressing toward some form of actuality, but is more or less restrained, and always determined, by the external actualities also in the field. Of this principle the notion of one only substance in the universe, that is, of the essential homogeneity of existence, is a true corollary, since restraint can be exercised only by something of a common nature with the object restrained. From this principle, also, may almost be deduced the conclusion that the empirical forms of existence will show a vast multiplicity; for every kind of thing will inevitably come into being unless prevented by types of greater potency. The most serious criticism is that the principle is assumed without necessity. It is neither *demanded* inductively for the organization of experience, nor —judging from the number of thinkers who have conceived the world without it—is it justified by the Cartesian test itself: it is not a coercive insight of the mind. On the other hand, the number of first-class minds who have found in it the clue to the world riddle shows its real importance as a metaphysical *hypothesis*.

To inquire into all the motives of Spinoza in this remarkable theory is too large a theme for a closing remark; but perhaps it is possible to suggest in part why the quantitative view of perfection appealed to our philosopher and to so many of his scholastic predecessors. Apparently it was because it met their craving for homogeneity, or structural simplicity, in the world ground. Through it the universe was easier to conceive—a prime consideration with many

minds. Then the quantitative emphasis seemed to guarantee the permanence of the world-order. Nothing external could be thought of as ever rising to overthrow it; for what is there beyond the all? Nor was dissolution to be feared from internal causes, for existence on this view is of one nature throughout, and all fundamental distinctions are purely quantitative; and, be the riot of change what it may, the universe abides forever *essentially* the same.

No doubt these are legitimate ends of metaphysical effort and construction; but they seem to be considerably lower in dignity than the possible values disclosed through a view of the world based upon qualitative appreciation.

WILLIAM FORBES COOLEY

BERKELEY'S REALISM

The purpose of this paper is to set forth Berkeley's realism as the controlling motive in his philosophy. His resolution to "side in all things with the mob" (I, 7),[1] expressed in the opening notes of the *Commonplace Book*, has been too much neglected by historians through a traditional habit of reading Berkeley's writings in the light of Locke's *Essay Concerning Human Understanding* and in the light of Berkeley's theological bias. His relation to Locke is important and I shall deal with it later. His theological bias is pronounced. While it is idle to speculate as to what his philosophy would have been if he had not had a consuming desire to confound atheists and to make men conscious of the immediate and beneficent presence of God, it is clear that this desire made the acceptance of many propositions easy to him and also guided him often in the choice and rejection of arguments. Berkeley is not, however, the only philosopher who has made God a first principle in metaphysics. Least of all was he idiosyncratic in this respect among his contemporaries and immediate predecessors. Both Locke and Newton, as well as the leading philosophical minds of the day, held that ultimately God is the author of all being. Berkeley like Spinoza might have taken this principle seriously in philosophy without the prejudices of a bishop to assist him. To make these prejudices a peculiar motive in his thinking appears to me, therefore, to indicate a lack of historical perspective. It seems far more consonant with the intellectual atmosphere of his day to recognize that God as a philosophical principle was one of the data of speculation which, largely because it was such, Berkeley

[1] The references, unless otherwise indicated, are to A. C. Fraser, *The Works of George Berkeley*, 4 vols., Oxford, 1901, and are made by volume and page.

would not suffer to be removed from the place of first importance. Perhaps a bishop might be more sensitive than ordinary men to the difficulties lurking in the joint recognition of God as the creator and conserver of nature, on the one hand, and of nature as something absolute and mathematical, on the other, but since many bishops, fully as devout as Berkeley, were not so sensitive, it does not seem likely that theological bias affords any significant clue to the interpretation of his philosophy.

His realism, however, does appear to afford just such a clue. It furnished him with the weapons to destroy, as he thought, the mathematical conception of nature with its obnoxious consequences and to enforce the spiritualistic conception with its intimate deity. It made the principle *esse est percipi* self-evident to him and a natural consequence of the reality of sensible objects. It explains more satisfactorily than any other factor in his philosophy his use of the term "idea." In short, I take it to be the leading motive which, operating upon the systems of nature with which he was familiar, forced them into his own individual philosophy. By this I do not mean that his philosophy was the natural consequence of his realism, as if he started with a realistic metaphysics and then deduced from it the implication of a spiritual world. I mean rather that, convinced as he was that nature is something which we immediately perceive, he used this conviction to force what for him was the paramount issue in philosophy, namely, the independent existence of a material world in space.

In developing this view of him, I shall not consider specifically his nominalism, his polemic against abstract ideas, or his remarks on the abuse of words. These are all of importance in a comprehensive exposition of his philosophy. They do not appear, however, to be of first importance in its motivation. They are introduced, as the introduction to the *Principles of Human Knowledge* shows, to explain why men

have not seen the truth as Berkeley sees it. By the abuse of words, by the doctrine that we have abstract ideas of extension and color as such, and by the belief in real "essence" or "substance," men "have raised a dust and then complain we can not see." Only when this dust is blown away are we ready for philosophy. The chief obstacles to clear thinking, as Berkeley conceives them, hardly constitute the positive motives of his own thought.

Berkeley's relation to Locke affords a convenient point of departure for the present study because of the close association of these two names in subsequent philosophy. This association has become so habitual that Berkeley is often considered to be a disciple of Locke and to have found in the *Essay* both the motive and the method of his own philosophizing.[2] Such an opinion needs examination. Berkeley's open opposition to the *Essay*, his criticism of its fundamental position regarding the reality of human knowledge,[3] and the fact that Locke's general philosophical position is wholly incompatible with Berkeley's, would indicate that the former's influence was primarily negative. And such seems to me to be the fact. Locke appears in Berkeley's writings not as a teacher or leader, but as a misguided, though brilliant, exponent of a false philosophy. Nor does it appear that it was Locke alone or Locke especially that put Berkeley "into position for reflection." Newton was fully as responsible, but the truth appears to be that it was no single thinker, but rather the mathematical interpretation of nature which

[2] For example, Fraser, in his *Life and Letters of Berkeley*, Oxford, 1871, states, in commenting on the *Commonplace Book*: "Locke was the prevailing external influence in putting him, as it were, into position for reflection, and (that) he proceeded in his intellectual work on the basis of postulates which he partly borrowed from Locke, and partly assumed in antagonism to him. In his early philosophy he was Locke's successor, somewhat as Fichte was the successor of Kant. In criticising the *Essay on Human Understanding*, he makes Locke more consistent with himself, and occupies a position which is partly the immediate consequence of the one his predecessor had taken." This estimate of Locke's influence needs, as I hope to show, considerable modification.

[3] Early in the *Commonplace Book* we find the memorandum: "Nicely to discuss Lib. 4 c. 4. Locke" (I, 24). The reference is to the chapter on the reality of knowledge.

Newton had systematized and to which Locke had given such important support in the *Essay Concerning Human Understanding*. This is a matter of so much importance that it merits examination with some detail.

Berkeley's personal estimate of Locke was high, but qualified. He speaks of him in the first edition of the *New Theory of Vision* as a "deservedly admired author" and as a man of "a clear understanding" (I, 188, 189). In the first edition of the *Principles*, Locke appears as "a late excellent and deservedly esteemed philosopher" and "a learned author" (I, 243). In the *Miscellanea Mathematica*, he is *sapientissimus vir* and *vir omni laude major* (IV, 55, 61). Whether Berkeley on reflection thought such praise too high and so altered some of these expressions later we can only guess, but in the last edition of the *New Theory of Vision* Locke is "the author" simply and is no longer credited with the possession of "a clear understanding," while in the later editions of the *Principles* the words "excellent and" are omitted.[4] In the *Commonplace Book*, however, the statements are significant. The first reference there to Locke takes notice of his wisdom, in contrast to Newton's, in leaving motion undefined (I, 12). He is praised for his contempt of the Schoolmen (I, 18) and for differing in certain points from the Cartesians (I, 51). In a note on abstraction he is described as being "as clear a writer as I have met with," to which is added this comment: "Such was the candour of this great man that I perswade myself, were he alive, he would

[4] Personally, I am inclined to believe that these changes are significant. See also the *New Theory of Vision* (I, 191): "(The excellent) Mr. Locke;" and a *Defence of Freethinking in Mathematics* (III, 92): "You give me to understand that this account of a general triangle was a trap which Mr. Locke set to catch fools. Who is caught therein let the reader judge." Berkeley did not always observe his "N. B. To rein in ye satyrical nature" (I, 32). See also his "We Irishmen" (I, 91–92). In this connection, and generally, it is worth keeping in mind Berkeley's comment on himself: "He that would bring another over to his opinion, must seem to harmonize with him at first, and humour him in his own way of talking. From my childhood I had an unaccountable turn of thought that way" (I, 92). See also (II, 396): "It is to be noted that, in considering the *Theory of Vision*, I observed a certain known method, wherein, from false and popular suppositions, men do often arrive at truth."

not be offended that I differ from him: seeing that in so doing I follow his advice, *viz.*, to use my own judgement, see with my own eyes, & not with another's" (I, 39). But approval and praise are qualified. For instance, just preceding the passage last quoted we read: To bring the "killing blow at the last, *e. g.*, in the matter of abstraction to bring Locke's general triangle in the last." Again: "Locke's great oversight seems to be that he did not begin with his third book; at least that he had not some thought of it at first. Certainly the 2d & 4th books don't agree w^{th} w^{t} he says in y^{e} 3d" (I, 42). This seems clearly to imply that if Locke had so begun he would not have been led astray by words. Berkeley compares himself with Locke as follows: "Gyant who shakes the mountain that's on him must be acknowledged. Or rather thus: I am no more to be reckon'd stronger than Locke than a pigmy should be reckon'd stronger than a gyant, because he could throw off the molehill w^{ch} lay upon him, and the gyant could only shake or shove the mountain that oppressed him. This in the Preface" (I, 37). With this should be read the following: "Wonderful in Locke that he could, w^{n} advanced in years, see at all thro' a mist; it had been so long a gathering, & was consequently thick. This more to be admired than y^{t} he did not see farther" (I, 26). Nearly all the remaining references to Locke in the *Commonplace Book*—there are at least seventy which are explicit—are either colorless by themselves or express objections to his views.

From the foregoing it is evident that Berkeley personally regarded Locke as an able thinker, who, however, was not able enough to see through the mist that had become thick. Nowhere in the *Commonplace Book*, except in one reference, "All knowledge onely about ideas. Locke B. 4. c. I" (I, 21), and in similar statements where Locke is not mentioned, is there any significant indication of a fundamental agreement between the two philosophers. This impression is

strengthened by all the writings Berkeley himself published. Although in the *Commonplace Book*, Locke is the author cited by far most frequently, in these other writings this is not the case.[5] And it is noticeable that he is cited almost invariably to be criticized or rejected.[6] The apparently crucial reference to 'ideas' will be considered later, but it may be confidently asserted that Locke does not appear in Berkeley's own admissions as a peculiar or guiding influence. Whatever his influence was must be inferred by the reader of Berkeley, for it can not be found in any significant form by direct acknowledgment.

This conclusion assumes a more positive aspect when we consider the general setting in which references to Locke are made. The important fact to note here is that this setting is the mathematical science of nature as illustrated by Newton's *Principia* and not the science of mind as illustrated by Locke's *Essay*. We have become so accustomed to reading the *Theory of Vision* as a psychological inquiry into the perception of space, and the *Principles of Human Knowledge* as a work on epistemology, that the fact noted has become obscured. I do not imply that they should not

[5] Newton, for instance, is equally prominent. See the index to Berkeley's works. It should be noted that Fraser has, through his notes, produced the appearance of more frequent citation than is warranted. Many of his inferred references to Locke contain nothing really significant. This is less true of the references to Newton.

[6] In the *New Theory of Vision* his admiration of sight is quoted (I, 191), but elsewhere he is condemned for his doctrine of abstraction (I, 189) and criticized for his solution of Molyneux's problem (I, 193). In the latter connection this passage in the *Commonplace Book* is interesting: visible distance may be demonstrated heterogeneous from tangible distance "from Molyneux's problem, w^{ch} otherwise is falsely solv'd by Locke and him" (I, 61). In the *Principles* he is again condemned for 'abstraction' (I, 243. See also III, 91–93). In Berkeley's criticism of the distinction between primary and secondary qualities (I, 262, 384–401), Locke is not mentioned, but is doubtless in mind. Yet this distinction was not peculiar to Locke, as is clear from Descartes, Hobbes, Malebranche, Newton, and others. Locke is praised for his approval of mathematics and for counsels which if intelligently followed would rid the science of some obscurities (III, 410, in previously unpublished essay on Infinity, and IV, 55, 61). His doctrine of time is criticized in a letter to President Johnson (II, 19, and see implied references in this connection, I, 58, 59, 311–312, 319). In *Alciphron* Locke's definition of knowledge is given without quotation marks: "Knowledge is the perception of the connexion or disagreement between ideas" (II, 320).

be so read, but rather that, when so read, they should be read in their context. Berkeley's initial interest was in mathematics. In 1709, two years before the publication of the *Theory of Vision*, his *Arithmetica* and *Miscellanea Mathematica* were published, although written in 1705. *De Motu* was published in 1721, *The Analyst: or, A Discourse addressed to an Infidel Mathematician*, in 1734, and *A Defence of Free-thinking in Mathematics*, in 1735. In the *Commonplace Book* references to mathematics occur on almost every page.[7] Indeed, we can not read that interesting document without the feeling that Berkeley is preparing for a vigorous assault on the mathematical interpretation of nature. The *New Theory of Vision* he regarded as a work on optics and its criticisms are aimed almost exclusively at mathematical writers on the subject.[8] The *Principles*, especially in the discussion of "natural philosophy" (I, 313ff.), again shows how much mathematics was in his mind. It is apparent, furthermore, that he regarded a revised mathematics as an

[7] The references are so numerous that it is unnecessary to detail them. He mentions the leading mathematical writers of the day: Newton, Pardico, Halley, Cheyne, Barrow, Wallis, Descartes, Keill, and others.

[8] The references to Locke I have noted above. The criticisms of Barrow (I, 135–145), of Molyneux (I, 145), of Wallis (I, 164), and of Descartes and Gassendi in the appendix (I, 207–210) are to be noted. His theory of vision is evidently a 'new' theory because it is not mathematical. I shall speak of it more fully later. Here, however, I quote his own statement from the *Theory of Vision Vindicated and Explained* (II, 396):

> In the contrivance of Vision, as that of other things, the wisdom of Providence seemeth to have consulted the operation rather than the theory of man; to the former things are admirably fitted, but, by that very means, the latter is often perplexed. For, as useful as these immediate suggestions and constant connexions are to direct our actions; so is our distinguishing between things confounded, and as it were blended together, no less necessary to the speculation and knowledge of truth.
>
> The knowledge of these connexions, relations, and differences of things visible and tangible, their nature, force, and significancy hath not been duly considered by former writers on Optics, and seems to have been the great *desideratum* in that science, which for want thereof was confused and imperfect. A Treatise, therefore, of this philosophical kind, for the understanding of Vision, is at least as necessary as the physical consideration of the eye, nerve, coats, humours, refractions, bodily nature, and motion of light; or as the geometrical application of lines and angles for *praxis* or theory, in dioptric glasses and mirrors, for computing and reducing to some rule and measure our judgments so far as they are proportional to the objects of geometry. In these three lights Vision should be considered, in order to a complete Theory of Optics.

important undertaking and one which would strengthen his own philosophy.[9]

This interest in mathematics was not, however, if I may speak a little paradoxically, the interest of a mathematician. Although Berkeley's strictly mathematical criticisms were often acute and penetrating, he made no significant contribution to the subject. He did not, and evidently could not, reform the science in the direction of his criticisms. There is much to substantiate the charge that he was not "mathematically minded," for although he distinguishes between mathematics as a method and as a science of nature, his criticism of the calculus shows that his grasp of the method was not profound. It is as an opponent of the mathematics of his day that his interest is exhibited. Now it is in the setting defined by this opposition that the references to Locke are generally made. His doctrines lent support to the mathematicians and had, therefore, to be exposed and condemned. Their strongholds were the distinction between primary and secondary qualities, matter with its abstract geometrical properties, and "real" points, lines, surfaces, solids, curves, and angles existing absolutely in an absolute space. Locke was their ally, but he ought not to have been. If they had taken seriously his remarks on infinity or if he, seeing a little way through the mist, had only seen further and applied rigorously his own admirable comments on the pit-falls of the understanding and the abuse of words, the result would have been a clearer and more consistent philosophy.[10] Thus it appears that Berkeley himself regarded Locke not as a peculiar or noteworthy influence on his own thinking, but rather as one of a group of thinkers—Newton, Descartes, Barrow, Raphson, and others—who

[9] Note among other references in the *Commonplace Book*, "Barrow owns the downfall of geometry. However I'll endeavour to rescue it—so far as it is useful, or real, or imaginable, or intelligible. But for *the nothings*, I'll leave them to their admirers" (I, 90). But see especially the attempts in *De Motu* and *Siris*.

[10] All this I believe to be amply substantiated by the references already cited. It is besides the mass impression, so to speak, I get from examining Berkeley's relation to Locke.

shared in common the mathematical conception of nature. It was that conception and not any one of its supporters which stimulated him to set forth his own philosophy.

Nor can I find any significant influence of Locke in determining the general type or method of Berkeley's philosophical writings. Here again the traditional association of the Irishman with the Englishman has tended to emphasize similarities which they share with other writers. Descartes, Hobbes, Spinoza, Malebranche—with all of whom Berkeley appears to have been acquainted—write from the point of view of human nature or the human understanding. This was a fashion set by Descartes and Hobbes and not without support in Francis Bacon. It is true that, like Locke, Berkeley examines our ideas and sets forth what we in the course of our experience perceive by our senses, but neither of them was novel in that, for they were evidently not the first psychologists. The significant fact is, however, that Berkeley does not do this in Locke's manner nor with Locke's presuppositions about experience. Had he done so his own philosophy would have been ruined, for the presupposition of an originally empty mind furnished with ideas through experience of an independent external world of mathematical objects in an independent space would have involved the surrender of Berkeley's contentions. Even with regard to this presupposition it is worth remarking that Locke is distinguished not for originating it, but for his way of stating it and the thoroughness with which he used it. The only significant passages I recall where Berkeley is like Locke in this method of approach are in the first dialogue between Hylas and Philonous. Here, by an argument somewhat in the manner of Locke, Hylas is forced to admit that his ideas are only in his mind and have no external existence.[11] But the opening passages of the second dialogue

[11] The instance of pain on which some emphasis is laid is, of course, not peculiar to Locke. And note in this connection the *Commonplace Book* (I, 11): "I may say the pain is *in* my finger, *etc.*, according to my doctrine."

bring the whole physiological and material approach to an analysis of ideas into confusion.[12] This examination of Berkeley's relation to Locke will have served part of its purpose if it has established the conclusion that Berkeley was in no significant sense the disciple of Locke and that he regarded Locke principally as one of a group of thinkers to whose principles he was opposed. I quote in final confirmation of it Berkeley's own words in the *Defense of Free-*

[12] The passage is so significant that I quote it at some length (I, 420–422):

Hyl. I own there is a great deal in what you say. Nor can any one be more entirely satisfied of the truth of those odd consequences, so long as I have in view the reasonings that lead to them. But, when these are out of my thoughts, there seems, on the other hand, something so satisfactory, so natural and intelligible, in the modern way of explaining things that, I profess, I know not how to reject it.

Phil. I know not what way you mean.

Hyl. I mean the way of accounting for our sensations or ideas.

Phil. How is that?

Hyl. It is supposed the soul makes her residence in some part of the brain, from which the nerves take their rise, and are thence extended to all parts of the body; and that outward objects, by the different impressions they make on the organs of sense, communicate certain vibrative motions to the nerves; and these being filled with spirits propagate them to the brain or seat of the soul, which, according to the various impressions or traces thereby made in the brain, is variously affected with ideas.

Phil. And call you this an explication of the manner whereby we are affected with ideas?

Hyl. Why not, Philonous? Have you anything to object against it?

Phil. I would first know whether I rightly understand your hypothesis. You make certain traces in the brain to be the causes or occasions of our ideas. Pray tell me whether by the *brain* you mean any sensible thing.

Hyl. What else think you I could mean?

Phil. Sensible things are all immediately perceivable, and those things which are immediately perceivable are ideas; and these exist only in the mind. Thus much you have, if I mistake not, long since agreed to.

Hyl. I do not deny it.

Phil. The brain therefore you speak of, being a sensible thing, exists only in the mind. Now, I would fain know whether you think it reasonable to suppose that one idea or thing existing in the mind occasions all other ideas. And, if you think so, pray how do you account for the origin of that primary idea or brain itself?

Hyl. I do not explain the origin of our ideas by that brain which is perceivable to sense—this being itself only a combination of sensible ideas—but by another which I imagine.

Phil. But are not things imagined as truly *in the mind* as things perceived?

Hyl. I must confess they are.

Phil. It comes, therefore, to the same thing; and you have been all this while accounting for ideas by certain motions or impressions of the brain; that is, by some alterations in an idea, whether sensible or imaginable it matters not.

Hyl. I begin to suspect my hypothesis.

And I refer again to Berkeley's comment on his own habit of starting from false premises. See above, p. 169, n. 4.

thinking in Mathematics (III, 93): "This doctrine of abstract general ideas seemed to me a capital error, productive of numberless difficulties and disputes, that runs not only throughout Mr. Locke's book, but through most parts of learning. Consequently, my animadversions thereupon were not an effect of being inclined to carp or cavil at a single passage, as you would wrongfully insinuate, but proceeded from a love of truth, and a desire to banish, so far as in me lay, false principles and wrong ways of thinking, without respect of persons. And, indeed, though you and other party-men are violently attached to your respective Masters, yet I, who profess myself only attached to truth, see no reason why I may not as freely animadvert on Mr. Locke or Sir Isaac Newton, as they would on Aristotle or Des Cartes. Certainly the more extensive the influence of any error, and the greater the authority which supports it, the more it deserves to be considered and detected by sincere inquirers after knowledge."

The examination of Berkeley's relation to Locke has had an additional purpose—namely, to point out that Berkeley was stimulated to philosophical reflection by the mathematical conception of nature. This conception he attacked, confident that it was founded on principles that could not stand the light of criticism. His reason for attacking it was his conviction that it either made God unnecessary or identified Him with matter and space. His religious disposition revolted from this consequence, but, as I have suggested above, it does not seem reasonable to conclude that this consequence was evident to him because he had a religious disposition. Many equally religious men did not draw it, but went happily to church in a material world. He has left us in no doubt that for him it was a philosophical consequence. In the *Principles* (I, 323) he writes:

> What is here laid down seems to put an end to all those disputes and difficulties that have sprung up amongst the learned concerning the

nature of *pure space*. But the chief advantage arising from it is that we are freed from that dangerous dilemma, to which several who have employed their thoughts on that subject imagine themselves reduced, *viz.*, of thinking either that Real Space is God, or else that there is something beside God which is eternal, uncreated, infinite, indivisible, immutable. Both which may justly be thought pernicious and absurd notions. It is certain that not a few divines, as well as philosophers of great note, have, from the difficulty they found in conceiving either limits or annihilation of space, concluded it must be *divine*. And some of late have set themselves particularly to shew that the incommunicable attributes of God agree to it. Which doctrine, how unworthy soever it may seem of the Divine Nature, yet I must confess I do not see how we can get clear of it, so long as we adhere to the received opinions.

These words express the fundamental reason why he attacked Locke and Newton and the supporters generally of the mathematical conception of nature.[18]

This attack was motived, as it seems to me, by presuppositions borrowed, not from Locke's psychology, but from the naïve realism of the common man. Berkeley often makes this realism difficult for the common man to recognize because, first, of his denial of the existence of objects in space, and, secondly, because of his doctrine that *esse* is *percipi*. I shall consider both of these matters presently. Here I may repeat a remark made in the beginning of this paper. Berkeley reinforces his doctrine by an appeal to nominalism and by a polemic against abstract general ideas

[18] The paragraph quoted is, as the reader of Berkeley is aware, not an isolated instance. As the *Commonplace Book* is not generally read, I note only the principal passages from it bearing on the point to show how early it forced itself upon his mind. "Matter once allow'd, I defy any man to prove that God is not Matter" (I, 32). "Candidly to take notice that Locke holds some dangerous opinions; such as the infinity and eternity of Space and the possibility of Matter's thinking" (I, 39). "Hobbes & Spinoza make God extended. Locke also seems to do the same" (I, 52). "The great danger of making extension exist without the mind is, that if it does it must be acknowledg'd infinite, immutable, eternal, *etc.*;—wch will be to make either God extended (wch I think dangerous), or an eternal immutable, infinite, increate Being beside God" (I, 81). "Locke, More, Raphson, *etc.*, seem to make God extended. 'Tis nevertheless of great use to religion to take extension out of our idea of God, & put a power in its place. It seems dangerous to suppose extension, wch is manifestly inert, in God" (I, 82). The references to Newton in the *Principles* should be noted in this connection (I, 318–323). See also the sections on mathematics (I, 324–332).

in order to show why men have missed the truth. But the common man is a pronounced realist. While he confidently believes that he perceives real things precisely as they exist, he no less confidently believes that these real things exist in a real space and that so existing they are quite independent of the fact that he perceives them. Because of his own nominalism Berkeley was forced to convince the common man—and the learned too—that the latter's realism was not reflective. It, no less than the truth, was obscured by the mist and veil of words.[14] When once this veil was torn away, the realism of the common man remained with its basal assumption of the immediate perception of reality unaffected. Consequently, when I say that Berkeley's attack was motived by the presuppositions of this realism, I do not imply that he left this realism unaffected.

The *New Theory of Vision* makes it evident that in Berkeley's mind the stronghold of the mathematicians was optics and the doctrine of space which that science implied. His basal objection to them is expressed by saying that they have the "humour of making one see by geometry" (I, 152). This attempt of theirs implies that we perceive the distance, magnitude, and situation of objects by means of factors which are not themselves perceived at all. He insists, on the contrary, that how we perceive can be explained only in terms of what we perceive. Any hypothesis involving factors which from the nature of the case are unperceived and unperceivable must be rejected.[15] His own positive conclusion is expressed in the oft quoted passage (I, 199):

> Upon the whole, I think we may fairly conclude that the proper objects of Vision constitute the Universal Language of Nature; whereby we are instructed how to regulate our actions, in order to attain those things that are necessary to the preservation and well-being of our bodies, as

[14] "The chief thing I do or pretend to do is onely to remove the mist or veil of words. This has occasion'd ignorance & confusion. This has ruined the schoolmen and mathematicians, lawyers and divines," *Commonplace Book* (I, 33). It will be remembered that for Hylas, too, the mist was pretty thick.

[15] See especially secs. 10–14 (I, 130–131).

also to avoid whatever may be hurtful and destructive of them. It is by their information that we are principally guided in all the transactions and concerns of life. And the manner wherein they signify and mark out unto us the objects which are at a distance is the same with that of languages and signs of human appointment; which do not suggest the things signified by any likeness or identity of nature, but only by an habitual connexion that experience has made us to observe between them.

Thus it is that we see, not by geometry, but by experience. Locke could say something very similar to this in his short chapter on perception when he cites Molyneux's problem to show how "the ideas we receive by sensation are often, in grown people, altered by the judgment without our taking note of it."[16] From this chapter Berkeley quotes, and his comment is noteworthy (I, 194):

It is a mistake to think the same thing affects both sight and touch. If the same angle or square which is the object of touch be also the object of vision, what should hinder the blind man, at first sight, from knowing it? For, though the manner wherein it affects the sight be different from that wherein it affected his touch, yet, there being, beside this manner or circumstance, which is new and unknown, the angle or figure, which is old and known, he cannot choose but discern it.

In other words Berkeley finds in the illustration of Molyneux no confirmation of the doctrine that the same mathematical object affects different senses giving us, thus, different ideas of the same thing. He finds, rather, confirmation of his own conclusion that the proper objects of vision constitute the universal language of nature. We should read his whole theory of vision and particularly his emphatic insistence that visible extension is different from tangible extension in the light of this conclusion and not in the light of the associationist psychology.[17] That is, our ideas of

[16] *Locke's Essay Concerning Human Understanding*, A. C. Fraser, Oxford, 1894, Vol. I, p. 185.

[17] It may be, as it repeatedly has been, read in that light and may afford excellent material for the associationist. Yet the essay itself makes it perfectly clear that the explanation Berkeley gives of our habit of saying that we see and feel the same thing is the explanation of a nominalist and not of an associationist. See especially I, 196, secs. 139–140.

visible and tangible extension are not associated or combined by experience into an idea of extension itself. They do not unite to give us the idea of an object which they represent. Berkeley's doctrine is radically different. Visible and tangible extension are precisely what we see and feel directly and immediately. He calls them 'ideas', but they are not 'ideas of' anything. They are real components of nature and not components of the mind. They enter into the composition and framework of nature and not into the composition and framework of the mind. They are things we immediately perceive and these things are held together not in some embracing space, but in a system of mutual representation and symbolism. They are not held together in the mind by psychological laws of association, but they are perceived by the mind and the way they are connected is learned by the mind through experience of their actual symbolism.

Thus it appears to me that Berkeley's theory of vision is in its presuppositions the realism of the common man refined by the nominalism of the philosopher. In it we have, not a theory of sense-perception, but a theory of what we perceive.[18] And what we perceive is not ideas which somehow know or represent the system of nature, for what we perceive is itself the system of nature. Furthermore this system is not to be described in terms of mathematics, but in terms of meaning and living. In other words optics teaches that the system of nature is not a system of math-

[18] See the emphatic statement on this point in the *Theory of Vision Vindicated and Explained* (II, 388):

"As in this inquiry we are concerned with what objects we perceive, or our own ideas, so, upon them our reasonings must proceed. To treat of things utterly unknown, as if we knew them, and so lay our beginning in obscurity, would not surely seem the properest means for the discovering of truth. Hence it follows, that it would be wrong if one about to treat of the nature of Vision, should, instead of attending to visible ideas, define the object of sight to be that obscure Cause, that invisible Power or Agent, which produced visible ideas in our minds. Certainly such Cause or Power does not seem to be the *object* either of the sense or the science of Vision, inasmuch as what we know thereby we know only of the effects." Compare secs. 36, 37, and 43 of this work for Berkeley's conception of the full scope of optical inquiry.

ematical objects in space, but a system of real colors, *etc.*, no less coherent and unified than a supposed system of objects in space could be. This system we perceive. We do not create it or impose it upon the crude elements of experience. It is created independent of us, but by perceiving it we are able to live in it.[19] The common man loses the space of the mathematicians and his own realistic conception of it, but he keeps intact the immediate reality of the sensible world.[20]

It is needless, I think, to review the other writings of Berkeley to show how fundamental and controlling this presupposition of the realism of the mob is. His realism is universally acknowledged. But, because it has so often been regarded as an idiosyncrasy in a man who under the influence of Locke would have been a skeptic or a subjectivist if he had not been a bishop, I have thought it worth while to indicate how this realism is the presupposition of his thinking. From its vantage ground and not from that of Locke's *Essay*, as it seems to me, he makes his attack

[19] Compare (II, 174): This Optic Language hath a necessary connexion with knowledge, wisdom, and goodness. It is equivalent to a constant creation, betokening an immediate act of power and providence. It can not be accounted for by mechanical principles, by atoms, attractions, or effluvia. The instantaneous production and reproduction of so many signs, combined, dissolved, transposed, diversified, and adapted to such an endless variety of purposes, ever shifting with the occasions and suited to them, being utterly inexplicable and unaccountable by the laws of motion, by chance, by fate, or the like blind principles, doth set forth and testify the immediate operation of a spirit or thinking being; and not merely of a spirit, which every motion or gravitation may possibly infer, but of one wise, good, and provident Spirit, which directs and rules and governs the world. Some philosophers, being convinced of the wisdom and power of the Creator, from the make and contrivance of organised bodies and orderly system of the world, did nevertheless imagine that he left this system with all its parts and contents well adjusted and put in motion, as an artist leaves a clock, to go thenceforward of itself for a certain period. But this Visual Language proves, not a Creator merely, but a provident Governor, actually and intimately present, and attentive to all our interests and motions, who watches over our conduct, and takes care of our minutest actions and designs throughout the whole course of our lives, informing, admonishing, and directing incessantly, in a most evident and sensible manner. This is truly wonderful. Compare also (I, 471).

[20] See *Commonplace Book* (I, 91). "The philosophers lose their abstract or unperceived Matter. The mathematicians lose their insensible sensations. The profane [lose] their extended Deity. Pray w^t do the rest of mankind lose? As for bodies, *etc.*, we have them still."

upon the metaphysics of Newton and his associates and followers. They had contended that the perceived world is not the system of nature. Through their hypothesis of matter with mathematical properties existing in space they forced men to conclude that the whole sensible world was a system of phantasms in the mind, unreal except in so far as matter operating through the senses on the brain of man produced there somehow a system of ideas. To Berkeley all this was both impious and unintelligible. He met it, not simply by decrying its impiety, but by bringing to bear upon it the naïve realism of the common man refined by the tenets of nominalism. The perceived world *is* the system of nature—and from that affirmation he drew what he thought it implied in the confident belief that the mathematicians would henceforth be silenced.

While it seems needless to give further illustration of this view,[21] I will not refrain from quoting at length an interesting passage from the *Dialogues between Hylas and Philonous* (I, 422–424). The last sentence of the quotation is worth special attention.

Phil. Look! are not the fields covered with a delightful verdure? Is there not something in the woods and groves, in the rivers and clear springs, that soothes, that delights, that transports the soul? At the prospect of the wide and deep ocean, or some huge mountain whose top is lost in the clouds, or of an old gloomy forest, are not our minds filled with a pleasing horror? Even in rocks and deserts is there not an agreeable wildness? How sincere a pleasure is it to behold the natural beauties of the earth! To preserve and renew our relish for them, is not the veil of night alternately drawn over her face, and doth she not change her dress with the seasons? How aptly are the elements disposed! What variety and use [in the meanest productions of nature!] What delicacy, what beauty, what contrivance, in animal and vegetable bodies! How exquisitely are all things suited, as well to their particular ends, as to

[21] Yet the *Commonplace Book* ought to be consulted. "I am farthest from scepticism of any man. I know with an intuitive knowledge the existence of other things as well as my own soul. This is wt Locke nor scarce any other thinking philosopher will pretend to" (I, 26). This is but one illustration. Compare I, 56, 57, 63, 65, 71, 80–84, 88. For typical illustrations of the many elsewhere, see I, 463, 471; II, 389.

constitute opposite parts of the whole! And, while they mutually aid and support, do they not also set off and illustrate each other? Raise now your thoughts from this ball of earth to all those glorious luminaries that adorn the high arch of heaven. The motion and situation of the planets, are they not admirable for use and order? Were those (miscalled *erratic*) globes once known to stray, in their repeated journeys through the pathless void? Do they not measure areas round the sun ever proportioned to the times? So fixed, so immutable are the laws by which the unseen Author of nature actuates the universe. How vivid and radiant is the lustre of the fixed stars! How magnificent and rich that negligent profusion with which they appear to be scattered throughout the whole azure vault! Yet, if you take the telescope, it brings into your sight a new host of stars that escape the naked eye. Here they seem contiguous and minute, but to a nearer view immense orbs of light at various distances, far sunk in the abyss of space. Now you must call imagination to your aid. The feeble narrow sense cannot descry innumerable worlds revolving round the central fires; and in those worlds the energy of an all-perfect Mind displayed in endless forms. But, neither sense nor imagination are big enough to comprehend the boundless extent, with all its glittering furniture. Though the labouring mind exert and strain each power to its utmost reach, there still stands out ungrasped a surplusage immeasurable. Yet all the vast bodies that compose this mighty frame, how distant and remote soever, are by some secret mechanism, some Divine art and force, linked in a mutual dependence and intercourse with each other; even with this earth, which was almost slipt from my thoughts and lost in the crowd of worlds. Is not the whole system immense, beautiful, glorious beyond expression and beyond thought! What treatment, then, do those philosophers deserve, who would deprive these noble and delightful scenes of all *reality*? How should those Principles be entertained that lead us to think all the visible beauty of the creation a false imaginary glare? To be plain, can you expect this Scepticism of yours will not be thought extravagantly absurd by all men of sense?

Hyl. Other men may think as they please; but for your part you have nothing to reproach me with. My comfort is, you are as much a sceptic as I am.

Phil. There, Hylas, I must beg leave to differ from you.

Hyl. What! Have you all along agreed to the premises, and do you now deny the conclusion, and leave me to maintain those paradoxes by myself which you led me into? This surely is not fair.

Phil. I deny that I agreed with you in those notions that led to Scepticism. You indeed said the *reality* of sensible things consisted in an *absolute existence out of the minds of spirits*, or distinct from their being

perceived. And pursuant to this notion of reality, *you* are obliged to deny sensible things any real existence: that is, according to your own definition, you profess yourself a sceptic. But I neither said nor thought the reality of sensible things was to be defined after that manner. To me it is evident, for the reasons you allow of, that sensible things cannot exist otherwise than in a mind or spirit. Whence I conclude, not that they have no real existence, but that, seeing they depend not on my thought, and have an existence distinct from being perceived by me, *there must be some other Mind wherein they exist.* As sure, therefore, as the sensible world really exists, so sure is there an infinite omnipresent Spirit who contains and supports it.

As I indicated above Berkeley altered naïve realism not only by his denial of space, but also by his doctrine that *esse* is *percipi*. These two alterations are intimately connected. The things we immediately perceive do not exist in space; they do exist in the mind. Perforce they *exist in* something.[22] The destruction of space demanded a substitute for the thing destroyed. Mind was the obvious substitute, for it was common knowledge that, empirically considered, there were only two orders of existence, existence in space and existence in the mind. Nor did existence in the mind present a serious difficulty to any philosopher who was not a materialist. For the mind was not spatial and to exist in it did not mean to be in something extended, but to be 'presented to', to be 'comprehended', to be 'perceived'. For naïve realism, nature when perceived was *in* the mind, and the difficulty felt by the materialists and men like Locke and Newton arose from the fact that with them what we perceive is mediated by the body and exists

[22] I think historians have not sufficiently remarked that through the seventeenth and eighteenth centuries ultimate conceptions had no other language but that of Scholasticism. The axiom which Spinoza placed first of all his axioms, *Omnia quae sunt vel in se vel in alio sunt*, was as fundamental and evident a truth as philosophers generally could admit. Not its truth, but its meaning was disputed. Things existed *in* space, attributes *in* substance, ideas *in* the mind, individuals *in* species, species *in* genera, genera *in* a *summum genus*, everything *in* God. This was no less true of Newton and Locke than of Berkeley, Spinoza, and the Schoolmen. Only the meaning of *in* was in dispute. (I can't help remarking how naturally and without intention I have by "*in* dispute" illustrated the axiom.) But whatever that preposition meant, "existence" always meant "existence in."

in it before there is any perception. Yet even with them to be in the mind meant to be perceived.[23] In view of these considerations and of Berkeley's nominalistic reconstruction of naïve realism the doctrine that *esse* is *percipi* had the axiomatic appearance which Berkeley repeatedly claimed for it.

Nowhere, that I recall, does he attempt to prove this fundamental principle of his philosophy. It is always 'evident'. The opposite of it is always 'unintelligible' or 'repugnant'. An intuitive knowledge of it may be obtained "by any one that shall attend to what is meant by the term *exist* when applied to sensible things" (I, 258). Now propositions are "self-evident," even to philosophers, only in their context and looked at against the background from which they are projected. For my part the only context and background I can find that served this purpose

[23] I think it is needless to support these general considerations by detailed references to the writings of the time. That philosophy operated with the fundamental distinction between *res extensa* and *res cogitata* or *cogitans* is too evident. But the following from Berkeley himself may be instanced (I, 470): "When I speak of objects existing in the mind, or imprinted on the senses, I would not be understood in the gross literal sense; as when bodies are said to exist in a place, or a seal to make an impression upon wax. My meaning is only that the mind comprehends or perceives them; and that it is affected from without, or by some being distinct from itself." Compare also: "By [mind] I do not denote any one of my ideas, but a thing entirely distinct from them, wherein they exist, or, which is the same thing, whereby they are perceived" (I, 258). The conception of the mind as a structure of mental elements (consciousness) had as yet little or no currency. Yet it should be remembered that Berkeley himself comes very near to this conception in some of the notes in the *Commonplace Book*: "The very existence of ideas constitutes the soul." "Consciousness, [as Fraser remarks, 'a term rarely used by Berkeley or his contemporaries'] perception, existence of ideas, seem to be all one." "Mind is a congeries of perceptions. Take away perceptions and you take away the mind. Put the perceptions and you put the mind" (I, 27). But note the next: "Say you, the mind is not the perception, not that thing which perceives. I answer, you are abused by the words 'that a thing.' These are vague and empty words with us" (I, 28). In another connection (I, 130 n.) Fraser aptly remarks: "Mark here and elsewhere, the ambiguity of the term *perception*, which now signifies the act of being conscious of sensuous phenomena, and again the act of inferring phenomena of which we are at the time insentient; while it is also applied to the object perceived instead of to the percipient act; and sometimes to imagination, and the higher acts of intelligence." In other words, with Berkeley, the term had not yet been differentiated into its later meanings. I can find no evidence that with him even a "congeries of perceptions" means a "congeries of things perceived." " 'Tis most sure & certain that our ideas are distinct from the mind." "The Spirit, the Mind, is neither a volition nor an idea" (*Commonplace Book*, I, 54–55). This 'ambiguity' in Berkeley has been no small factor in fitting him into later associationist psychology.

was the context and background of naïve realism. The mob must agree with him when once it is nominalistically enlightened, and even the materialists can not escape, for with them the existence of what we perceive consists in its being perceived. In the context and with the background of an enlightened realism he thought he had discovered the meaning of 'to exist'. That discovery constituted in his judgment his contribution to philosophy. Like many another ardent soul he thought he had found the one single and self-evident principle in the light of which all the obscurities of existence could be made clear.[24]

[24] See *Commonplace Book* (I, 17). " 'Tis on the discovering of the nature and meaning and import of Existence that I chiefly insist. This puts a wide difference betwixt the sceptics, *etc.*, & me. This I think wholly new. I am sure this is new to me."

Berkeley's doctrine of the spiritual universe I shall not dwell upon as it is not very relevant to the present study. It is sufficient to remark that he provides for the permanency and constancy of nature by the Scholastic doctrine of conservation. The most suggestive and illuminating passage which I have found on this point is contained in a letter to President Johnson, of King's College, New York. I quote it here, remarking that it should be read in connection with the latter part of *Siris*, certain passages of which I shall refer to later. The extract from the letter follows (*Life and Letters of Berkeley*, A. C. Fraser, p. 180): "Those who have all along contended for a material world have yet acknowledged that *natura naturans* (to use the language of the schoolmen) is God; and that the divine conservation of things is equipollent to, and, in fact, the same thing with a continued repeated creation: in a word, that conservation and creation differ only in the *terminus a quo*. These are the common opinions of the schoolmen; and Durandus, who held the world to be a machine like a clock, made and put in motion by God, but afterwards continuing to go of itself, was therein particular, and had few followers. The very poets teach a doctrine not unlike the schools—*Mens agitat molem*. (Virgil's *Aeneid* VI.) The Stoics and Platonists are everywhere full of the same notion. I am not therefore singular in this point itself, so much as in my way of proving it. Further, it seems to me that the power and wisdom of God are as worthily set forth by supposing him to act immediately as an omnipresent infinitely active spirit, as by supposing him to act by the mediation of subordinate causes, in preserving and governing the natural world. A clock may indeed go independent of its maker or artificer, inasmuch as the gravitation of its pendulum proceeds from another cause, and that the artificer is not the adequate cause of the clock; so that the analogy would not be just to suppose a clock is in respect of its artist what the world is in respect of its Creator. For aught I can see, it is no disparagement to the perfections of God to say that all things necessarily depend on him as their Conservator as well as Creator, and that all nature would shrink to nothing, if not upheld and preserved in being by the same force that first created it. This I am sure is agreeable to Holy Scripture, as well as to the writings of the most esteemed philosophers; and if it is to be considered that men make use of tools and machines to supply defect of power in themselves, we shall think it no honour to the divinity to attribute such things to him." See also, I, 282, Sec. 46; and II, 174.

As I have said above, Berkeley does not prove his principle. It is woven into his philosophy in such a way as to appear to be both its central theme and the epitome of any acknowledged reality of the perceived world. Nowhere, perhaps, is this more clearly exhibited than in the *Dialogues between Hylas and Philonous*. His argument can be reduced to the following three propositions which seem to contain all that constituted Berkeley's 'singularity': (1) materialism, or the mathematical conception of nature makes the perceived world unreal; (2) but the perceived world is the only real world; (3) it is inconceivable that the perceived world should exist otherwise than as a perceived world. All the difficulties which arise in connection with this argument—naturally I do not refer to difficulties touching its soundness, but only those touching an historical comprehension of it—are due to Berkeley's use of the term 'idea' and the tendency to construe its use in terms of Locke's *Essay* and subsequent psychology. Both philosophers affirm that 'ideas' are the only immediate objects of the mind. Locke says that he uses the term 'idea' "to express whatever is meant by *phantasm*, *notion*, *species*, or *whatever it is which the mind can be employed about in thinking*."[25] "By *idea*," says Berkeley, "I mean any sensible or imaginable thing" (I, 47). Although they both speak thus about ideas in the same way and assign to them the same position as the only immediate objects of the mind, it seems impossible to conclude that they were speaking about the same thing. They used the same term, but what that term identified as the immediate object of the mind was not the same. With Locke ideas are not the things which make up the system of nature; with Berkeley they are. With Locke they are what we have come to call subjective and psychological; with Berkeley they are not. With Locke they are mental counterparts of impressions on the brain; with Berkeley

[25] *Essay*, Introduction, Sec. 8.

they are not. With Locke they are the means of knowing, representing what is known by them; with Berkeley they are the materials of knowledge and in no sense representations of something known by their means. In short, judged by any standard of comparison which touches the nature of ideas and gives them their peculiar character and properties, there is discoverable no likeness between the two philosophers. This is such an evident fact that I can not dismiss it on the supposition that Berkeley simply used Locke as a scaffolding to erect his own philosophy and then inconsiderately cut the scaffolding away. Some other explanation is needed and the obvious explanation, as I shall more fully indicate later, is that philosophy had sanctioned such diversity of usage. Since the time of Plato 'ideas' was a well-authenticated term to denote the objects of knowledge, and men had abundantly discussed the locus of their existence. In fact, in the general use of the term, Berkeley appears to have been far more orthodox than Locke.

Yet Berkeley was conscious that the term was one to occasion difficulty. As early as the *Commonplace Book* he observes (I, 50): "I hope to call a thing idea makes it not less real. Truly I should perhaps have stuck to the word thing, and not mentioned the word idea, were it not for a reason, and I think a good one too, which I shall give in the Second Book."[26] This second book, unfortunately, was not published. If it was written the manuscript is lost. However we are not left without some indication of the reason. In the *Dialogue between Hylas and Philonous* (I, 453) he says: "I own the word *idea*, not being commonly used for *thing*, sounds something out of the way. My reason for using it was, because a necessary relation to the mind is understood to be implied by the term; and it is now commonly used by philosophers to denote the immediate objects of the under-

[26] See other indications, I, 39, 57, 89; also *Principles*, I, 307.

standing."[27] In particular it was so used by the materialists. This was undoubtedly a source of considerable satisfaction to Berkeley, for it enabled him to confront them with the dilemma, either our ideas are the real things or real things are wholly inaccessible to the understanding.[28] Yet if the term is an occasion of too much difficulty he will not dispute over a name only. "Moses mentions the sun, moon, and stars, earth and sea, plants and animals. That all these do really exist, and were in the beginning created by God, I make no question. If by *ideas* you mean fictions and fancies of the mind, then these are no ideas. If by *ideas* you mean immediate objects of the understanding, or sensible things, which cannot exist unperceived, or out of a mind, then these things are ideas. But whether you do or do not call them *ideas*, it matters little. The difference is only about a name. And, whether that name be retained or rejected, the sense, the truth, and reality of things continue the same. In common talk, the objects of our senses are not termed *ideas*, but *things*. Call them so still: provided you do not

[27] Note *Commonplace Book* (I, 38): "Excuse to be made in the Introduction for using the word *idea*, *viz.*, because it has obtain'd. But a caution must be added."

[28] See *Commonplace Book* (I, 63): "Allowing there be extended, solid, *etc.*, substances without the mind, 'tis impossible the mind should know or perceive them; the mind, even according to the materialists, perceiving onely the impressions made upon its brain, or rather the ideas attending these impressions." See also the *Principles* (I, 266):

But, though it were possible that solid, figured, moveable substances may exist without the mind, corresponding to the ideas we have of bodies, yet how is it possible for us to know this? Either we must know it by Sense or by Reason. As for our senses, by them we have the knowledge only of our sensations, ideas, or those things that are immediately perceived by sense, call them what you will: but they do not inform us that things exist without the mind, or unperceived, like to those which are perceived. This the materialists themselves acknowledge.—It remains therefore that if we have any knowledge at all of external things, it must be by reason inferring their existence from what is immediately perceived by sense. But (I do not see) what reason can induce us to believe the existence of bodies without the mind, from what we perceive, since the very patrons of Matter themselves do not pretend there is any necessary connexion betwixt them and our ideas? I say it is granted on all hands (and what happens in dreams, frensies, and the like, puts it beyond dispute) that it is possible we might be affected with all the ideas we have now, though no bodies existed without resembling them. Hence it is evident the supposition of external bodies is not necessary for the producing our ideas; since it is granted they are produced sometimes, and might possibly be produced always, in the same order we see them in at present, without their concurrence.

attribute to them any absolute external existence, and I shall never quarrel with you for a word" (I, 471).

From such passages it seems to me clear that Berkeley was not simply taking advantage of an ambiguity in the term to force an argument upon his opponents. The total impression of his writings is that of candor and sincerity. Ideas are the only objects of the mind, whatever ideas are. To Locke this was 'evident', but he does not make it clear whether it was evident only on Newtonian principles. But the passages quoted clearly show that Berkeley was impressed with the fact that even with Locke and the mathematical philosophy as a background the immediate objects of the mind can not exist apart from the mind. Consequently the only consideration of importance was what these objects are and what they constitute. To call them 'ideas' involved no advantage unless there was a clear understanding as to what ideas are. And, as I have already shown, when we ask this crucial question, we can not affirm that the 'ideas' of Berkeley and those of Locke have anything else in common besides being the immediate objects of the mind. They have this uncompromising difference—with Berkeley they constitute the system of nature, while with Locke they do not.

Locke and the materialists were not, however, the only philosophers who held that the immediate objects of the mind do not exist apart from it. Nor was Berkeley the only philosopher who held that these objects constitute the system of nature. He wrote *Siris* not only to make the public acquainted with the virtues of tar-water, but also to show how consonant with his own philosophy was the best, as he judged it, in the history of thought. He gives the following brief statement of his own position (III, 264): "Now, although such phantoms as *corporeal forces*, *absolute motions*, and *real spaces* do pass in physics for causes and principles (secs. 220, 249, 250) yet are they in truth but hypotheses;

nor can they be the objects of real science. They pass nevertheless in physics, conversant about things of Sense, and confined to experiments and mechanics. But when we enter the province of the *philosophia prima*, we discover another order of beings—Mind and its acts; permanent being; not dependent on corporeal things; nor resulting, nor connected, nor contained, but containing, connecting, enlivening the whole frame; and imparting those motions, forms, qualities, and that order and symmetry, to all those transient phenomena, which we term the Course of Nature." This is shortly followed by a series of comments on ancient philosophy. I quote the following sections as particularly illustrative (III, 273–275):

And albeit Aristotle considered the soul in its original state as a blank paper, yet he held it to be the proper place of forms—*τὴν ψυχὴν εἶναι τόπον εἰδῶν* (sect. 269). Which doctrine, first maintained by others, he admits, under this restriction, that it is not to be understood of the whole soul, but only of the *νοητική*; as is to be seen in his third book *De Anima*. Whence, according to Themistius in his commentary on that treatise, it may be inferred that all beings are in the soul. For, saith he, the forms are the beings. By the form every thing is what it is. And he adds, it is the soul that imparteth forms to matter; *τὴν ὕλην μορφοῦσα ποικίλαις μορφαῖς* Therefore they are first in the soul. He farther adds that the mind is all things, taking the forms of all things it becomes all things by intellect and sense. Alexander Aphrodisaeus saith as much, affirming the mind to be all things, *κατά τε τὸ νοεῖν καὶ τὸ αἰσθάνεσθαι*. And this in fact is Aristotle's own doctrine, in his third book *De Anima*, where he also asserts, with Plato, that actual knowledge and the thing known are all one. *Τὸ δ' αὐτό ἐστιν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι*. Whence it follows, that the things are where the knowledge is, that is to say, in the mind. Or, as it is otherwise expressed, that the soul is all things. More might be said to explain Aristotle's notion, but it would lead too far.

As to an absolute actual existence of sensible or corporeal things (sect. 264, 292, 294), it doth not seem to have been admitted either by Plato or Aristotle. In the *Theaetetus* we are told that if any one saith a thing is, or is made, he must withal say, for what, or of what, or in respect of what, it is, or is made; for, that any thing should exist in itself or absolutely is absurd. Agreeably to which doctrine it is also farther affirmed by Plato, that it is impossible a thing should be sweet and sweet to no-

body. It must, nevertheless, be owned with regard to Aristotle, that even in his *Metaphysics* there are some expressions which seem to favour the absolute existence of corporeal things. For instance, in the eleventh book, speaking of corporeal sensible things, what wonder, saith he, if they never appear to us the same, no more than to sick men; since we are always changing and never remain the same ourselves? And again, he saith, sensible things, although they receive no change in themselves, do nevertheless in sick persons produce different sensations and not the same. These passages would seem to imply a distinct and absolute existence of the objects of sense.

But it must be observed, that Aristotle distinguisheth a twofold existence—potential and actual. It will not therefore follow that, according to Aristotle, because a thing is, it must actually exist. This is evident from the eighth book of his *Metaphysics*, where he animadverts on the Megaric philosophers, as not admitting a possible existence distinct from the actual: from whence, saith he, it must follow, that there *is* nothing cold, or hot, or sweet, or any sensible thing at all, where there is no *perception*. He adds that, in consequence of that Megaric doctrine, we can have no sense but while we actually exert it: we are blind when we do not see, and therefore both blind and deaf several times in a day.[29]

Siris is taken by Fraser to represent Berkeley's philosophy in its later development (III, 117). It is certainly a later expression of it and a fuller exposition of it on the spiritual side. But I do not find that the position taken in the earlier writings is modified in any significant way. What we find is his own philosophy reflected against the philosophy of the past. In the earlier writings he has his contemporaries in mind and to them he is opposed. The *Siris* exhibits the men with whom he was sympathetic. It is this antagonism and this sympathy which should be joined together in any attempt to estimate him in the light of his own contemporary interests.[30] From this point of view his philosophy appears as simple and clear as he contended. Its fundamental thesis seems to be the following. Both materialists and spiritual-

[29] Compare also Secs. 251, 252, 266, 269. It is to be observed that he now uses the term 'thing' and sometimes 'forms', but in view of what has already been said above, I do not find the change significant.

[30] The subsequent fate of his philosophy is quite a different matter. In this study I have tried to recover the contemporaneous setting of his own thinking.

ists agree in claiming that the immediate objects of the mind do not and can not exist apart from it; both agree that these objects are 'ideas'; but the materialists claim that these objects do not constitute the system of nature, while the spiritualists claim that they do; by refining the naïve realism of the common man, the opposition between materialists and spiritualists is reduced to an absurdity. In his own words taken from the *Dialogues between Hylas and Philonous* (I, 484):

> I do not pretend to be a setter-up of new notions. My endeavours tend only to unite, and place in a clearer light, that truth which was before shared between the vulgar and the philosophers: the former being of opinion, that *those things they immediately perceive are the real* things; and the latter, that *the things immediately perceived are ideas, which exist only in the mind.* Which two notions put together, do, in effect, constitute the substance of what I advance.

FREDERICK J. E. WOODBRIDGE

A NOTE ON DR. THOMAS BROWN'S CONTRIBUTION TO ESTHETICS

Dr. Thomas Brown (1778–1820) was in the lines of development of both the Scottish philosophy and the association psychology. As became the successor of Dugald Stewart, he gave his adherence to the philosophy of common sense, but this did not prevent his assigning to association the principal constructive rôle in mental life. His total contribution to philosophy was not of overwhelming importance, though Spencer and the Mills thought highly of him. A longer life might have enabled him to make his contribution more noteworthy. His philosophical works were two, The *Inquiry into the Relation of Cause and Effect* and his more extensive *Lectures on the Philosophy of the Human Mind*, published posthumously. It is perhaps not surprising that Brown's work is now so little known. He belonged to a philosophical school no longer in much esteem, and the psychological doctrines which he espoused have likewise been superseded. His own work is not without value, his style is not wholly lacking in charm, and his lectures are lucid and orderly; but there is much repetition, minor points are often over-elaborated, and the numerous poetical quotations have little attraction for the present-day reader of philosophy, who looks less for literary elegance than for clearness, accuracy, and fresh points of view.

The only part of Brown's work to which special attention will be called in this paper is that which has to do with esthetics. Even in this field he has received scant attention from the historians. In esthetics he was of the lineage of Kames, Knight, Stewart, Alison, and Jeffrey. These men, and their contemporaries in esthetics as in other fields, were

for the most part attempting to see the facts. Theirs were no theories spun from their own imaginations or adopted as corollaries to some previously accepted metaphysical system. Actual esthetic experience furnished their data. They viewed the data, to be sure, through the media of their own philosophies, but on the whole it must be said that their conclusions were not vitiated by the attempt to force the facts into a rigid system. That their conclusions did not carry farther is due rather to the fact that they arrived at no great outstanding generalizations, than to their failure to analyze the data with a fair measure of correctness as far as they went.

The most striking point about Brown's esthetic theory is the completeness with which he anticipates, on certain essential points, the theory of one of our best-known contemporaries, Professor Santayana.

The term esthetic has been used to designate a variety of problems and a number of different ways of dealing with them. Attention may be focused upon art and the questions it raises, or upon beauty and whatever is most closely akin to beauty, such as sublimity, for example.

The approach in either case may be from the standpoint of metaphysics, or of concrete objects, or of esthetic experience either with or without consideration of the conditions of this experience in the field of physiology or of sociology. Brown's contribution is in the field of psychological esthetics. He considers the esthetic experience as the fundamental fact. Not art, but beauty, is his central problem, and for him beauty is not an eternal principle, nor a category, nor a quality of things:

> Beauty is not any thing that exists in objects independently of the mind which perceives them, and permanent, therefore, as the objects in which it is falsely supposed to exist. It is an emotion of the mind, varying, therefore, like all other emotions, with the varying tendencies of the mind, in different circumstances. We have not to inquire into the nature of any fixed essence which can be called the beautiful—τὸ καλὸν—

but into the nature of transient feelings, excited by objects which may agree in no respect but as they excite emotions in some degree similar. What we term the *emotion* of beauty is not one feeling of the mind, but many feelings that have a certain similarity, as greenness, redness, blueness, are all designated by the general name *colour*. There is not one beauty, more than there is one colour or one form. But there are various beauties—that is to say, various pleasing emotions, that have a certain resemblance, in consequence of which we class them together. The beautiful exists no more in objects, than species or genera exist in individuals. It is, in truth, a species or genus—a mere general term, expressive of similarity in various pleasing feelings.

In short, Brown's method is the method of psychological analysis. His contribution is to be found principally in Chapters LIII–LIX of his *Lectures on the Philosophy of the Human Mind*.

In his psychology, 'state' or 'affection' is the general term for mental phenomena, 'affection' being favored as better suited to express the "momentary feelings of the mind when considered as effects." Of these affections some, *viz.*, sensations, have external causes, while others have internal causes. The latter are either intellectual states such as judgment, memory, imagination, and comparison, or the emotions, which include "all or nearly all the mental states which have been classed by others under the head of *active powers*." These last are *immediate*, involving no notion of time, such as admiration; or *retrospective*, having a reference to the past, as remorse; or *prospective*, as hope. Immediate emotions are either moral or non-moral. Beauty belongs to the latter class along with cheerfulness, melancholy, and wonder.

It is neither a sensation nor a judgment, though in some respects it will be found to be closely akin to sensations. . . .

It is not a *sense* of beauty, . . . a sense which like our other senses must force upon the mind constantly or almost constantly a particular feeling when a particular object is present. The feeling of beauty . . . is not a sensation, but an emotion, a feeling subsequent to the perception or conception of the object termed beautiful.

This emotion of beauty has two essential characteristics. First of all it is pleasurable—in this all writers concur; and second, it is an emotion which we transfer and "embody in the object which excites it, whatever that object may have been, combining it at least partially with our very conception of the object as beautiful—much in the same way as we invest external forms with the colors which exist as feelings in our own minds or in vague conception. These two circumstances are the only circumstances that are essential to this emotion in all its varieties and in whatever way the emotion itself may be produced."

This "diffusion of feeling and combination of it with our notion of the cause of the feeling . . . is only an instance of a very general law of our mental constitution. It is indeed only an instance of that general tendency to condensation of feelings which gives the principal value to every object that is familiar to us. . . . The friend whom we have long loved is at each single moment what he has been to us in many successive years. Without recalling to us the particular events of these years he recalls to us their delight; or rather the very notion which we form of him contains in itself this diffused pleasure. . . . A beautiful object as felt by us . . . is . . . an object in which we have diffused the delightful feeling of our own mind."

On all these points Brown is in substantial agreement with Santayana. Both employ the psychological method. Although he calls his book the *Sense of Beauty*, Santayana asserts that "beauty is an emotion, an affection of our volitional and appreciative nature" (p. 49). Santayana's definition of beauty is stated in terms practically identical with those used by Brown. "Beauty is pleasure regarded as a quality of a thing;" its differentia is its objectification. "Emotions are essentially capable of objectification as well as impressions of sense." The views of the two men could not well be more similar. It is interesting to note that the

doctrine which they announce is anticipated in part at least in a passage in Kames's *Elements of Criticism* in which he speaks of beauty as a secondary quality. The independent formulation of this theory by three writers each about a century later than his predecessor is hardly less striking than the independent formulation of the Lange-James theory of emotion by James and Lange and the statement of a view similar in essential particulars by the Australian Sutherland.

Kames did nothing to develop or complete the theory of beauty as a secondary quality, but Brown, as we have seen, makes it fundamental in his whole esthetic theory. He very naturally seeks to explain why it is that one object excites the emotion in question while another does not, and why a given object does not excite it in all observers nor always in a given observer. Association is of course the principle of explanation. Do objects "primarily and absolutely have a power of producing this emotion," or may this emotion not wholly depend on those contingent circumstances which are capable of modifying it to so great an extent? He is not disposed to be dogmatic on this point, but he believes that probabilities point to the existence of certain intrinsic elements of beauty, independent of accidental associations of every sort. He finds, for example, in the pleasure of the child in bright colors and in the presence of simple mathematical relations among the sounds contained in the music of the most varied peoples, some evidence for the view, but owing to the fact that we can not analyze our experience sufficiently to enable us to exclude the effect of accidental associations, no final conclusion is possible. The burden of proof is, he holds, upon those who deny the existence of original beauty.

The influence of circumstances upon the perception of beauty may be likened to the influence of prejudice upon the perception of truth—truth "which is only a general name for a feeling" common to many propositions.

"The mind is formed to feel truth and to feel beauty; but it is formed also to be affected by circumstances the influence of which may in any particular case be inconsistent with either of those feelings." Thus an obvious unfitness for its purpose may overcome the pleasure which might otherwise come from a given form.

This line of argument finds at least an analogy in Santayana's discussion of the question "Are all things beautiful?" or "Are all things equally beautiful?" and in his conclusion that both the degrees of beauty and its essence depend upon our nature. "Real and objective beauty in contrast to a vagary of individuals means only an affinity to a more prevalent and lasting susceptibility, a response to a more general and fundamental demand." What Brown meant by original beauty does exist for Santayana and it exists by virtue of the fact that certain things do appeal to a general and fundamental demand, that is, by virtue of the fact that the mind is formed to feel beauty in certain circumstances.

What Brown speaks of as "condensation of regard" is much more clearly shown in Santayana's discussion of the beauty of expression. A memento is valued for its associations and so long as memento and association are held distinct the object is not esthetic. "But a little dimming of our memory will often make it so. Let the images of the past fade, let them remain simply as a halo and suggestion of happiness hanging about a scene, then this scene, however empty and uninteresting in itself, will have a deep and intimate charm. . . . We shall not confess so readily that we value the place for its associations, we shall rather say: I am fond of this landscape; it has for me an ineffable attraction. The treasures of the memory have been melted and dissolved and are now gilding the object that supplants them."

On numerous other minor points agreements more or less close are to be found as might be supposed in view of the

central thesis which is common to both. That two thinkers whose world views are so widely different and whose philosophical ancestry is so very diverse are in agreement upon a capital point in esthetics—a point so justly made—is at least worthy of passing notice.

There are numerous passages throughout Brown's work like the statement regarding truth quoted above which suggest the possibility of a philosophical progress which he did not live to realize. His esthetic theory at least is coherent and, in the main, sound.

ADAM LEROY JONES

THE ANTINOMY AND ITS IMPLICATIONS FOR LOGICAL THEORY

INTRODUCTORY

1. *The Plurality of Logics as the Source of Antinomies.*— Our ideas and beliefs can be traced to one or more of the following origins: (1) Testimony of others; (2) Instinctive feeling or 'intuition'; (3) Abstract reasoning from universal principles; (4) Sensory experience; (5) Practical activity and successful consequences.

Each of these sources may be, and actually has been, accepted as a primary criterion for determining philosophic truth; and thus to the five sources of belief there correspond the following five types of logical theory: (1) Authoritarianism; (2) Mysticism; (3) Rationalism; (4) Empiricism; (5) Pragmatism.

Each of these types of logical theories has a type of belief for the evaluation of which it appears to be especially suited. For example, the following beliefs: (1) That Napoleon existed; (2) That certain acquaintances would be congenial as friends; (3) That a billion and seven is not divisible by two; (4) That grass is green; (5) That it pays to advertise— would correspond in the order of their listing to the five criteria.

In addition to these special types of belief there is a large class of judgments which lend themselves with almost equal ease to evaluation by all of the five criteria. For example, the belief that eight and four make twelve is supported by the authority of others, by its congruity with our feelings, by deductive reasoning, by empirical observation, and by the successful consequences which usually result from action based on that assumption. By far the greater number of

our beliefs are of this second class; and even those which are primarily suggested and primarily tested by but one of the five logical grounds are usually felt to be at least potentially capable of being confirmed by some or all of the other criteria. Despite this general trust in the inter-confirmatory character of the five principles of logical evaluation, there does remain a class of beliefs which appears to be definitely established by some of the criteria and as definitely refuted by others. To this class of beliefs or judgments belong what are called 'antinomies', and it is with the antinomy and its logical implications that we are to be concerned in this paper.

2. *The Major and Minor Antinomies.* In general an antinomy may be said to arise whenever there is a conflict of logical criteria in regard to one and the same judgment. The following are examples:

(1) Our mystical intuition tells us that heavenly bodies must move in heavenly curves. The circle is the heavenly or perfect curve; therefore, the planets must move in circular orbits. Perception and calculation, however, prove that their orbits are elliptical. The conflict here is between intuition on the one side and sense and reason on the other.

(2) Othello's instinctive feeling tells him that Desdemona is true. But this lover's intuition conflicts with the testimony of Iago whose authority he accepts.

(3) Many physicists find what they regard as contradictory attributes of the hypothetical ether, which from the standpoint of reason should disprove its existence; yet because of the useful consequences which proceed from the assumption, they accept its reality on pragmatic grounds.

These are all examples of what may be called 'minor antinomies'. The conflicting situations which they illustrate are not such as to array reason against sense; and it is only to conflicts of this latter kind that the name of 'major antinomies' is fully applicable. For the logics of rationalism

and empiricism are almost universally recognized as superior in importance to those of authority, intuition, and practical success. The authoritarians, for example, can usually be forced to admit that those whose testimony should be accepted by us did not themselves derive their information from the testimony of others (which would involve an endless regress), but from direct revelations of their superior sense or reason. The mystics, too, are apt to restrict the exclusive use of their criterion of intuition to a rather special class of cases in which reason and direct experience are either silent or ambiguous; and when, as in the question of the inhabitability of the antipodes, our intuitive certainty that men could not walk head-downward on the underside of the earth comes into conflict with our explicit sensory observations of people in China, we swallow our intuitional repugnance and bow to the evidence of fact. As for the pragmatists, it is pretty certain that most of them would resent being classed as opponents of experimental evidence, and would claim on the contrary that their criterion of successful practical consequences was no more than an important extension and adaptation of the logic of empiricism to the needs of an evolving world.

It is on these grounds that we regard the antinomic conflicts of sense and reason as incomparably more serious in their import for logic than the clashings of the minor criteria of truth. The major antinomy is, moreover, of infrequent occurrence. In all ordinary matters direct perception and intellectual deduction go hand in hand and give to one another loyal and continuous corroboration; and in the rare cases of explicit conflict between them we experience the helpless distress which is felt by an affectionate child in the presence of a quarrel between his parents. It is only the apathetic and soggy-minded who can view with indifference or boredom the spectacle of a first-class antinomy in action. The person really interested in philosophy will find the situa-

tion intolerable and will be unable to attain peace of mind until he has dealt with it in one way or another. In dealing with a major antinomy, in which an immovable body of sensory evidence appears to be contradicted by the irresistible force of clear reasoning, there are three general attitudes or methods of a somewhat extreme character and three specific theories having the character of compromise, which logically may be, and which historically have been, employed by philosophers. I shall treat them in order and under the following captions: I, The Method of Skepticism; II, The Method of Ultra-rationalism; III, The Method of Ultra-empiricism; IV, The Relational Theory; V, The Punctiform Theory; VI, The Double Aspect Theory.

I

THE METHOD OF SKEPTICISM

It may be held that the antinomic conflict is irreconcilable and that the nature of reality is thereby proved unknowable. Skepticism (which is a type of logical theory in the same sense in which anarchism is a type of political theory and atheism a kind of theology) is thus established; for any problem in which the two primary criteria of truth are regarded as ultimately refuting one another would be essentially insoluble.

This attitude was probably taken by Gorgias in dealing with the antinomies of Zeno; and in modern times it has been explicitly defended by Sir William Hamilton and Mr. Herbert Spencer in regard to such supposedly antinomic questions as the finitude or infinitude of the world.

The general arguments for and against the skeptical position make a long story into which we can not now enter. The dialectical argument from antinomies is only one of several ways in which the discrediting of human knowledge has been attempted. We are the more justified here in

passing over it with scant treatment in that what it offers is not so much a solution of the antinomy, but rather a denial of all solutions. Its purely negative doctrine could be established only by the successful refutation of the entire group of positive types of logic. And if accepted it would get us nowhere. Moreover, even though the skeptic succeeded in demonstrating a complete '*ignoramus*' in regard to the antinomies, it would be difficult to see how he would be justified in deriving from it the arrogant pessimism of '*ignorabimus*'.

II

THE METHOD OF ULTRA-RATIONALISM

It may be held that when confronted by the antinomic situation in which reason and sense appear to conflict, sense must be discarded. For a world of *non-sense* is preferable to a world of *unreason*.

Now reason, when forced to triumph in the face of all sense, assumes many of the ear-marks of intuition, and the rationalist, in divorcing himself permanently from empiricism, becomes something very like a mystic. It was this ultra-rationalist attitude that Zeno took toward his own puzzles in which the unreasonableness of motion was supposed to have been demonstrated. Not only motion itself, but the whole world of sense (because it is hopelessly tainted with motion) he condemned as unreal; and the way was thus cleared for accepting the mystic world of Parmenides, in which was contained nothing but pure and changeless being. There have been many since Zeno who have followed him in taking the ultra-rationalist method of solving antinomies. Kant relegates space and time to the realm of the subjective on the ground that they contain antinomies. Mr. F. H. Bradley deals likewise and for like reasons, not only with space, time, and motion, but with qualities and

relations and all of the other characters of our finite experience. The ancient Hindoos and the contemporary Christian Scientists, actuated doubtless by a vaguer and more religious form of the same logic, condemn evil and with it the whole world of matter as unreal. The main difference between Zeno and his various followers is linguistic. For Zeno, the world of sense-experience is 'non-being'; for Kant, 'subjective'; for Mr. Bradley 'appearance'; for the Buddhists, 'mâya' or illusion; for the Eddyites, 'error of mortal mind'.

Now those of us who are at all empirically minded and who retain allegiance to sense will, of course, reject this ultra-rationalist solution of the antinomies as false. But the Zenonian attitude has been charged with a more deadly defect than falsity, namely, futility—and it is that charge especially which I wish to consider.

Suppose we admit, for the sake of argument, that the claim of unreality for the sensory world is true, what use can we make of such a truth? Does it allay the hunger for peace between the reasonable and the sensible to be told that the latter is illusory?

We will let Zeno convince us that in order for Achilles to catch a tortoise he would have to complete an infinite series of steps in a finite time and that it is difficult to understand how this is possible in a world of 'being'. But is it much easier to understand how it is possible in a world of 'non-being'? The difficulties charged against tortoise-catching are not based on an analysis of 'being', but on an analysis of space and time, and why these difficulties should vanish when the hunting ground is shifted to the realm of 'non-being' is not very clear. Of this at least we may be sure that no tortoise that ever crawled, not even the tortoise of Elea, would regard himself as any safer when assured by Zeno that he and the place in which Achilles was to catch him had been changed from being to non-being. If the mighty shift in metaphysical status was felt at all by a

tortoise it would be felt so gently as to seem almost verbal.

So also with Kant—we allow him to convince us of the difficulty of understanding how the divisibility of space is to be reconciled to the demand for indivisible elements of matter. But it does not become any easier to meet the difficulty if the space is made subjective and not objective, for the difficulty, such as it was, arose from the nature of space, not from the nature of 'objective'. The same comfortless conclusion comes to us from Mr. Bradley. The qualities and relations revealed in our experience can not, so he tells us, be reconciled with reason, for if a relation is to relate it must make a difference to its terms, *i. e.*, make them other than the terms which we apprehended as related. It is too bad that there is this difficulty (if it is a difficulty). But how does it help it to deny that the world of sense is 'real' and to assign it a status of 'appearance'? The twin concepts of reality and appearance may be valid and fruitful or they may not. Whether good or bad they are not in question. The answer involved in the quality-relation situation did not depend on the nature of 'reality' or the nature of 'appearance', but simply on the nature of qualities and relations. Are the contradictions or the tragedies of our experience mitigated by assuming or even proving that beyond our experience there is another experience in which they do not occur? The intellectual and moral evils in our world of appearance are one thing. Why then should we suddenly change the subject (unless of course it proves embarrassing) and begin talking about an absolute reality?

And, finally, as to the Buddhists, Christian Scientists, and such, they tell us that 'evil is good in disguise', or out and out 'illusion' or 'error of mortal mind'. So be it, but what of it? Why the disguise? Why the illusion or error? An evil disguise is as evil as anything else. An agonizing toothache may be assigned an illusory status, but between having a vivid hallucination of a toothache and having a

'real' toothache it would be hard to choose. In every case in which we seek to cure an intellectual discord such as an antinomy or a moral discord such as a sin or pain by changing the metaphysical status of the experience in which it occurs from real to unreal, we are committing the fallacy of irrelevant conclusion. For it is the actual nature of the experience and not the metaphysical status of 'subjective' or 'objective' with which we should concern ourselves.

In the foregoing discussion, I have tried to show that the Zenonian or ultra-rationalist method of dealing with antinomies applies not merely to intellectual, but to moral discords as well, and that the method is as futile and irrelevant in the one sphere as in the other. I should like in conclusion to this section to make a further application of the reasons already advanced and at the same time to remove a possible misapprehension based on the erroneous supposition that I would bar altogether the use of trans-empirical concepts.

'Transcendental' is for the sophisticated philosopher the equivalent of 'supernatural' for the plain man. Simple folk invent or discover paradises to help explain the puzzles and the miseries of earthly life, and gods to help explain the mystery and the cruelty of natural forces. For exactly the same reasons the intellectual gentility invent or discover 'realms' of pure being and of eternal ideas, and transcendental egos and absolutes. Simple or gentle—from the crudest supernatural paradise to the most subtle transcendental absolute there is the same twofold motive at work—a dissatisfaction both intellectual and moral with the world of actual experience. And for gentle and simple alike the same danger attends the procedure—the danger, namely, that the trans-empirical which should at most and in either of its two forms, be used as a causally explanatory *supplement* to the world of experience, will be misused as a *sub-*

stitute for that world. The result of such misuse has ever been a sinister passivism in ethics and religion and a futile irrelevancy in logic and metaphysics.

Zeno's solution of his antinomies is not to be condemned because he believed with Parmenides in a sphere of pure and changeless being—for aught we know there may exist not only an Eleatic, but also a Bradleyan absolute, or even several of each. The real error of the method lay in supposing that the internal harmonies of any such innocently hypothetical worlds could of themselves furnish relevant answers to the antinomies of the world in which we live.

III

THE METHOD OF ULTRA-EMPIRICISM

It may be held that when confronted by the antinomic situation in which reason and sense appear to conflict, reason must be discarded; for a world of unreason is preferable to a world of nonsense. And just as rationalism, when pushed to the extreme of opposing (and not merely subordinating) the evidence of sense and the facts of experience, became something very like mysticism, so empiricism, when pushed to the extreme of opposing (and not merely subordinating) the evidence of reason and the laws of logic, becomes something very like pragmatism. The two forms of what may be called 'intellectualism' are (1) rationalism, in which sense is regarded as secondary to reason, but in ultimate harmony with it, and (2) empiricism, in which reason is regarded as secondary to sense, but in ultimate harmony with it. If these definitions are accepted, both mysticism and pragmatism can be classed as the equal and opposite forms of 'anti-intellectualism'. In matters of this sort analytic definitions may give the impression of dialectical quibbling or question-begging; illustrations are better. Hence, as examples of what I mean by the ultra-empirical attitude, I cite the following instances:

(1) There is John Stuart Mill's admission of the possibility that on some remote planet the laws of arithmetic might be such as to permit of two and two making five. (2) There is Henri Bergson's doctrine that reason is an instrument evolved by the life force for the purpose of controlling the relatively inanimate and static aspect of nature; that in so far as it is used for this purpose it is admirable, but that when we attempt by its means to express the nature of life itself, or even of the dynamic side of 'dead' matter, it proves inadequate. Motion can be experienced, but it defies and transcends logical analysis and the fact that it does so is proof of its ultimate and irreducible reality. (3) There is William James's contention that some sort of fusion or identity between consciousnesses, though opposed to the laws of ordinary logic, must none the less be accepted as real.[1]

The ultra-empirical method of dealing with antinomies has developed partly as a natural reaction to the barrenness and artificialities of ultra-rationalism as exemplified in some forms of modern idealism, and partly as a not unnatural attempt to apply to logic itself the evolutionary theories which have so completely transformed the sciences of biology. psychology, and sociology.

The argument seems to run somewhat as follows: the structures and functions of our bodies have developed into

[1] The following passages from *The Pluralistic Universe* are admirably illustrative of the way in which an antinomy is dealt with by this ultra-empirical or anti-intellectualistic form of pragmatism—"That secret of a continuous life which the universe knows by heart and acts on every instant can not be a contradiction incarnate. If logic says it is one, so much the worse for logic. Logic, being the lesser thing, the static incomplete abstraction, must succumb to reality not reality to logic" (p. 207). "What must we do in this tragic predicament? For my own part I have finally found myself compelled to *give up the logic*, fairly, squarely, and irrevocably. It has an imperishable use in human life, but that use is not to make us theoretically acquainted with the essence of reality—just what it is I can perhaps suggest to you a little later. Reality, life, experience, concreteness, immediacy, use what word you will, exceeds our logic, overflows and surrounds it" (p. 212). "If I had not read Bergson I should probably still be blackening endless pages of paper privately in the hope of making ends meet that were never meant to meet and trying to discover some mode of conceiving the behaviour of reality which should leave no discrepancy between it and the accepted laws of the logic of identity" (pp. 214–215).

what they are because of their utility in the struggle for existence; and the same is true of our minds. Memory and imagination and the power to form concepts and combine them have evolved to their present form because they are useful adaptations to environment and answer to the needs of life. The rules according to which we reason are conditioned by the ends which we pursue and by the material means upon which the attainment of those ends depends. As life and its environment are in a process of change the rules by which the intellect must proceed will change also and the supposedly abstract and eternal laws of logic must share the same fate as the unchanging species and genera of pre-evolutionary days.

This argument from biology is strengthened by what we now know of the development of sociology and ethics. From the vantage ground of the present, the historian looking out over the past discovers a bewildering variety of moral codes and of political and economic institutions. He sees how those forms of social organization arose and developed in response to the needs of some particular community at some particular time and place. He sees further that when the interests of that community or the demands of its environment had so changed as to make desirable a new code, the cry for a change was answered by the claim that the code of the fathers was sacrosanct, ordained of God, transcendentally valid, eternally and universally applicable. Confronted as he is by this same spectacle recurring time after time and under circumstances the most varied, can we blame the social historian for smiling cynically at all claims for the changeless validity of anything, even of logic itself? 'Sacred', 'eternal', 'universal'—are they aught but the gaudy trappings which senile inertia and wolfish privilege have ever donned when threatened by revolutionary progress?

The biological and social-historical arguments for the ultra-empirical attitude toward logic are rounded out by

the contribution of modern psychological analysis. No longer are we permitted to conceive of a faculty of pure intellect, functioning abstractly and actuated by the impersonal and luminous love of truth. Our concepts, judgments, and syllogisms are framed and uttered in response to concrete needs, and change with their change. Personal motives, temperamental preferences, can always be found as the real empirical causes of logical processes. To separate logic from psychology and ascribe to it a changeless validity that would exempt it from the universal flux and make it an end in itself, would be as absurd as to consider the laws of agriculture apart from the crops to be produced.

In concluding our dialectical defense of the neo-Protagorean doctrine it must be remembered that no dialectical defense can possibly do it justice. The strength of the position is derived from the mass of concrete facts which have generated it. And ultra-empiricists are perhaps justified in viewing distrustfully even the most friendly attempts to try and label the wealth of evidence which they have accumulated. The massiveness of the three lines of argument is such as to make it difficult to feel anything but pity for the old-fashioned pedant who would pick some pet aspect of experience, such as logic, and try to preserve it alone from the onrushing, all-engulfing flood of evolutionary change.

Despite the seeming hopelessness of any attempt to withstand the arguments for ultra-empiricism, such attempts have been made, and the oldest of them is perhaps the most instructive. When Heraclitus proclaimed his doctrine of universal flux, he made no exception of any single thing in the world; everything changed. Heraclitus did not, to be sure, conceive of this omnivorous change as uniformly progressive or upward in direction, as do our Darwinian logicians of the present day, but he sang the primacy of motion over rest, of energy over substance, of the dynamic over the

static, of the functional over the structural, at least as earnestly and emphatically as any of his modern successors. But the first and greatest of dynamists did not hesitate to set a certain kind of limit to his universal flux. πάντα ῥεῖ. All *things* change, but the laws according to which all things changed were themselves changeless. They were changeless because they were the measure and condition of the change in things. Their changelessness was required as the presupposition of the changing things. Without their changelessness the change in things would not only lack measure, it would lack any sort of meaning; it would vanish into nothingness. Let me exhibit the position of the founder of dynamism in its relation to that of the evolutionary logicians in the form of an allegory.

A race is taking place. The horses run faster and faster. The excitement grows, becomes frenzied. The contagion of motion sweeps all before it. Men on foot join in the race; they are followed by dogs and birds and everything that can fly or crawl or swim; the spectators too are running and even the judges have left their stand and are racing with the others. The purpose of the race has been forgotten, but the joy in motion for its own sake is universal. The Master of the Race whose urgings all have now obeyed observes the spectacle and his brow clouds slightly. He is evidently still unsatisfied. At last he arises, his face alight with a final vision, the vision of the super-race. He cries in thunderous tones, "I have bidden all to run, yet is there one who disobeys. How dares the course on which ye run remain at rest and spoil my race? *Let the race-track race with the racers!* Then indeed will motion reign supreme." And as the poor race-track tries to obey and with dull amaze and infinite giddiness seeks for feet or wings with which to get into the running, something snaps and the mad scene vanishes into the limbo of the utterly meaningless. What was to have become a super-race has become nothing at all.

The master of the race represents our Darwinian logicians who would bring Heraclitus up to date and make dynamism universally consistent by relegating all logic, their own included, to the status of a concrete being. The thing can not be done. The race-track itself can not run with the runners and no more can the laws by which evolutionary change is to be defined and determined, themselves change or evolve.

Many who failed to see the concrete flux of Heraclitus have seen in one form or another his fluxless Logos. Parmenides saw only its shadow, the mere generic character of abstract being and permanence, projected into the abyss as a dark and homogeneous sphere. For the gorgeous mind of Plato the Logos was reflected above the sky as a rainbow of moral beauties and creative mystic powers. To Aquinas and Leibniz it seemed as the omnipresent intellect of an eternal God. By the transcendental Germans, it was taken for the presupposition of the sensible world, which it was, and then mistaken for the grandiose structure of their egos, which it certainly was not. The realistic or anti-Darwinian logicians of to-day perceive it less picturesquely, and more, perhaps, as Heraclitus himself. To them it is an objective and self-subsistent loom of invariant law, on which the ever-changing fabrics of evolving nature are perpetually woven.

To the Darwinian logicians we may cheerfully grant that apes have evolved into men. We refuse, however, to grant that therefore the meaning of an ape has evolved into the meaning of a man. We admit likewise that not only our motor and sensory organs, but also our higher functions of imagination and intellect have developed by natural selection on account of their utility for adaptation, but we refuse to admit that this in any way implies that the more recondite facts and laws which these newly evolved powers reveal to us, have themselves undergone any corresponding evolution. The laws of space and number and of matter and

energy have not changed from the times of Euclid and Pythagoras and Archimedes; the laws of gasoline engines were just the same in the days of the ancient Athenians as now. *We* know them and *they* did not. Not physics, but man's knowledge of physics has changed. We may reply in the same vein to the anti-intellectualist who bases his arguments for a changing and psychologistic logic upon the recognition of the concrete and personal motives which actuate men when they claim to be reasoning from a pure love of truth. We might even admit that no discovery even in logic or mathematics had ever been made except to satisfy some human interest of the person making it. If, for example, Pythagoras discovered the Pythagorean theorem, the cause of his intellectual process may have been (1) A sentimental desire to please his disciples, or (2) an economic desire to receive pay, or (3) a theological desire to glorify the gods. It is conceivable that sentimentalists, economists, and theologians might be interested in learning which, if any, of these personal motives functioned psychologically in the concrete situation in which such a law of logic or mathematics was discovered. It is not conceivable, however, that any mathematician or logician should regard such psychological or historical information as of the slightest relevancy to the Pythagorean theorem itself.

The ultra-empiricist who would solve an antinomy by discarding logic on the ground that its laws are the mere instrument of the life force is guilty of a fallacy of irrelevancy in which the changeless laws discovered by men are confused with the changing processes by which they are discovered. Now it was also a fallacy of irrelevancy which we charged against the ultra-rationalist and I should like to conclude this part of the discussion by a comparison of the two opposite positions.

The Zenonian and ultra-rationalist way of dealing with an antinomic conflict of reason and sense was to relegate the

world of sense to a status of non-being or appearance, and to put in its place a new world of pure reason from which all change and inconsistency were barred. And we pointed out that however beautiful these abstract and harmonious absolutes might be, their beauties were none the less irrelevant to the world of experience which remained with all its contradictions and evils just where it was before; no matter how often you called it abusive names such as 'non-being' or 'mere appearance'. And on the ethical and social side we noted the harm which these ultra-rationalist philosophers worked when they selected some particular favorite human institution which had outlived its usefulness, and, by giving it the status of god-given or transcendental law, succeeded in fastening it on later generations. In short, the main fault with ultra-rationalism is that it irrelevantly ascribes the unchanging character of abstract law to the changing character of concrete things, or rather to the changing character of the particular concrete things and customs which happen to be preferred, condemning the rest to the status of unreality or of evil, according as they are logical or ethical.

The Bergsonian or ultra-empiricist way of dealing with the antinomic conflict of sense and reason was to relegate logic to the status of a relative and changing thing, and the irrelevancy in the process consisted in mistaking changeless laws for the things and processes through which men discover them.

In short, when dealing with a conflict of sense and reason the ultra-rationalist identifies things with laws, while the ultra-empiricist identifies laws with things. The first course is the way of non-sense; the second the way of unreason. If you follow the ultra-rationalist, you are in danger of promoting a fallible opinion or custom to the status of an unchangeable verity and thereby impeding progress. If you follow the ultra-empiricist, you are in danger of

degrading objective truth to the status of shifting human opinion, and thereby rendering progress blind and meaningless.

In playing chess one does not make the ultra-rationalist mistake of regarding the changelessness of the rules as an obstacle to the succession of moves; nor does one make the ultra-empiricist mistake of changing or discarding the rules when confronted with a puzzling situation. *The confusion of the things that change with the laws that do not is the great mother of all confusions, and its two opposite forms are equally bad.*

We have now completed our account of the extreme methods of dealing with antinomies. The first of these methods, and the one most briefly treated, was that of the skeptic. This doctrine was treated briefly, because, as was stated, its negative attitude toward the antinomy hardly entitles it to rank as a solution. The two remaining methods of procedure were more carefully examined, and we are now free to leave the intransigeant parties by whom sense and reason are in turn sacrificed, and attend to the theories of those who believe that antinomies can be solved by an honorable compromise.

Most, if not all, of the great antinomies of history appear to turn on a situation in which the finite as *given* in perception clashes with the infinite as *demanded* by conception. This is certainly the case with the four famous puzzles about motion which were formulated by Zeno, the Eleatic. These puzzles are not only of great intrinsic and historical interest, but they are typical of the antinomy at its best or worst; and from them we select as a basis for our discussion of the three compromise theories the one which is, perhaps, the clearest and most picturesque. It is known as "The Arrow," and may be stated as follows:

A flying arrow, as typical of all moving bodies, appears to our senses to go from one place to another. Yet reason proves this to be impossible, and all motion together with the world that contains it, to be unreal; for at any one instant the arrow can occupy but one position (obviously a body can not be in two places at once), hence at each and every instant of the entire time of its apparent flight the arrow will be busy occupying positions, *and there will be no time left in which it could move* FROM *one position* TO *another*.

The puzzle reveals clearly the two opposite characters that any continuum such as motion must possess. The one character is perceptual, empirical; the other, conceptual and rational. In the first character the continuum appears as a finite, fluid, unity of dynamic relations; in its second character it appears as an infinite granular plurality of static points or terms. The three compromise theories all agree in the belief that these opposing characters can be reconciled, but they differ in that they respectively select the first, or the second, or both, as of fundamental reality. The third theory in which the two characters are regarded as equal and ultimate can be named the 'empirico-rational', or better, the 'double aspect' theory. The first and second theories might be called, respectively: (1) the moderate empirical and the moderate rational, or (2) the finitist and the infinitist, or (3) after Kant, the thetic and the antithetic, or (4) the fluid and the granular, or (5) after Bergson, the slide and the cinema, or (6) the dynamic and the static, or (7) the relational and the punctiform. While feeling free to use these names interchangeably, we shall adopt the last pair as, on the whole, best suited to our purpose. We have dwelt on the possibilities of terminology in order that by iteration of the opposition in its several phases we might make the understanding of the question at issue less cold and abstract and more warmly

anschaulich. And with this preamble on the relations of the theories to one another, we may now proceed to the discussion of the theories themselves, considered separately and in order.

IV

THE RELATIONAL THEORY

The supporters of the relational solution of the puzzle argue that Zeno's division of time and space into durationless instants and extensionless points is unjustifiable. Duration and extension are fundamental and irreducible; instants and points are only artificial constructs which we make for certain purposes; they can not be regarded as objective constituents of the continua to which we apply them any more than shadows can be regarded as constituents of the bodies that cast them. The boundary or intersection of two lines is in no sense a part of the lines, and points and instants are at best nothing more than cuts or boundaries. Hence, Zeno commits a fallacy of logical analysis when he infers that because a moving body traverses a great space in a great time and a small space in a small time that, therefore, it "occupies" a series of spaceless points in a series of timeless instants. If points and instants are only subjective constructs of ours with no objective existence, Zeno's moving arrow can never get stuck in them, and we shall never have to ask as to whether it moves from one point to the next.

This solution is nearer to the ultra-empiricism of Bergson than to the ultra-rationalism of Zeno, because it preserves the reality of motion, as testified to in perception. But it differs from the ultra-empirical position, in that it claims to reconcile the fact of motion with the laws of logic. The paradox is removed, not by abandoning logic, but by substituting good logic for bad. The strong feature of the relational theory is, in our opinion, its recognition that space and time contain relational constituents which can not be

resolved into points and instants. The weak part of the theory consists in its assertion that space and time are exclusively relational and that the points and instants are not genuine constituents of their continua. We can certainly find points without limit on a line, and we could not find them unless they were there to be found. And with instants it is the same. These punctiform elements of time and space are as undeniably given in perception as are the relations of succession and linearity which unite them.

The upholders of the relational theory are much given to the use of the word 'abstraction' as a term of abuse. An abstraction is a feature of a situation which is distinguishable, but not separable, from other features. Color, for example, is clearly distinguishable from extension, but we can not conceive it as separate or apart from it. In this same sense, a point is an abstraction, because we can not separate it from other points and from lines. But why should an abstraction be regarded as 'unreal', or 'subjective', or 'constructed by the mind'? Features of a situation would not be distinguishable unless they were there to be distinguished; and the fact that a thing like a point is only real *in situ* does not prove it unreal. There is no obvious reason why an indissoluble relationship should be prejudicial or derogatory to a thing's objectivity. The relationists seem to feel that for an element to be real *in itself* it must be real *all by itself*.

Then, too, there is an incongruity in the way in which the real relational elements of continua are made by this theory to combine with their 'abstract' or 'subjective' terms. How, for an example, could an unreal point serve as the middle of a real line? How can the space filled by the earth be real and the axis and central point be unreal? Terms and relations are correlative and they must be either real *together* or unreal *together*.

But before criticizing this theory further, let us turn to its rival, the punctiform theory, where also we shall discover both a merit and a defect.

V

THE PUNCTIFORM THEORY [2]

Motion is nothing but the occupancy by a body of a continuous series of spatial points in a continuous series of temporal instants. At the initial instant of its motion, a body occupies its initial position; at each succeeding instant it occupies a succeeding position; and this joint occupancy of a one-to-one series of points and instants is all that motion consists in. Thus Zeno's question as to when does an arrow move from one position to the next position on its path, is seen to owe its difficulty to a false assumption as to the nature of motion. The arrow never does move *from* one position *to* the next. It *is at* one position at one instant and it *is at* the 'next' position at the 'next' instant, and that is all there is to its motion. This view puts exclusive emphasis on the 'at-at' character of motion just as the preceeding view emphasized the 'from-to' character. And as that theory resembles Bergson's solution, so this theory resembles that of Zeno; for it admits the illusoriness of one aspect of perceived motion. We certainly do perceive motion as being *from* one place *to* another, but this aspect of 'from-to' is treated by Russell as an illusion. The apparently unitary motion is, in reality, an 'at-at' succession of occupied positions, and nature plays on our senses the same trick that is played by the cinema, the only difference being that in the cinematograph the successive photographs are

[2] This theory, as I understand it, was developed first by the German mathematician Weierstrass and then independently by Mr. Bertrand Russell. It is fully expounded by the latter in his references to Zeno, both in his *Principles of Mathematics* and in his *Scientific Method in Philosophy*. I trust that in my brief sketch, I have made no serious misrepresentation.

separated from one another by small but finite intervals of time and distance; while in nature's 'movie' the successive pictures form the same perfect continuum as the points of a line. To the punctiform theory there are two objections which must now be considered.

First, it may be charged that the solution is paradoxical because it resolves *moving* into a series of *restings*. But to this it is answered that the occupancy of one point for one instant is not true rest, Rest is the occupancy of one point for *more* than one instant. In short, the conception provides a certain basis, whether adequate or not, for the differentiation of rest and motion.

Second, it may be urged that the cinema theory, although it does not make motion into rest, does reduce it to a series of occurrences whose multiplex character provides no ground for the unity of motion and for the identity of the moving body. If a body merely occupies or occurs at a given instant in a given position and is then annihilated, a new body just like the old being created in the next (?) position, what is there to justify our calling the second body identical with the first? This creation and annihilation is exactly what happens in a moving picture. To this objection, it could, I suppose, be answered that the unity and identity of motion was done full justice to by permitting no gaps to separate the successive occupancies, so that an exact description of all that is real in movement is furnished by the one-to-one correlation of a mathematically continuous series of points and instants effected by the moving body. Yet, this seems to me as though we were bidden to imagine necklace of beads without any underlying connecting thread on which the beads are strung, and told that if the beads are only sufficiently numerous to form a mathematical continuum, we shall have no need for a thread to hold them together.

What I have called the 'double-aspect' theory appears to me to combine the strong points of the relational and

punctiform solutions of the Zenonian puzzle and to omit the points in which they are weak.

VI

THE DOUBLE-ASPECT THEORY

Every continuum, such as space, or time, or motion is composed of two kinds of elements—the punctiform and the relational. A spatial line truly contains an actual infinity of points, but by themselves these points could never compose the line. They can compose it only when they are ordered or united by a certain type of relation. That is to say, all points in the series, if they are to constitute a line, must stand to one another in the relation of 'besideness' or 'to-the-right-and-left-of'. Without this relation they might just as well constitute a two-dimensional *patch* or a three-dimensional *lump*. Without the points the line could not exist; without the relations between the points, they could never constitute a line. Neither the relational nor the terminal elements can be reduced to the other, though there is a certain reciprocity between them, such that we can not only regard the relational elements as relating the points, but we can equally well treat the relational elements as terms and regard the points as merely the relations (boundaries) between them. The points could not exist apart from such relations as 'to-the-right-of' or 'in-front-of,' any more than these relations could exist without the points which they related. If one should still ask for the absolute elements which simply in and of themselves, without anything further, compose a line, we should have to answer that each such element would be a thing of double aspect—not a point, but a 'point-to-the-right-of'. It is important to realize that the situation is in no way changed by considering the points as constituting a mathematically continuous series, such that there would be no point on the line not included in it. No matter how densely or con-

tinuously the points are conceived as being packed together, there would still be the relational elements between them which could never be squeezed out.[8]

Now, as it is with space, so it is with time. Instants are temporal points, and like those of space, they are perfectly objective and real—not created, but actually discovered or waiting to be discovered. But they are not the whole of time. In and of themselves they would be powerless to constitute the temporal continuum. Just as the points of space must be related by being beside one another, so the instants of time must be before and after one another. Relations of succession are as truly elements as the instants themselves. And the succession of instants is not itself an instant any more than the relation of besideness between points is itself a point. In short, time consists of instants succeeding one another, just as space consists of points beside one another. Now, motion is a secondary continuum, constituted by the combination or correlation of the two primary continua of space and of time. The punctiform theory is correct in holding that a moving body is a body that occupies a continuous series of spatial points in a continuous series of temporal instants, but it is incorrect in holding that that is the whole story. A moving body, besides involving a series of point-instant correlations, involves equally a series of beside-succession correlations. The first correlations exhibit motion as a series of *occupancies* of a continuum of points through a continuum of instants. The second correlation exhibits motion as a series not of occupancies but of *slips*, (or from-to relations of transition), which together constitute an uninterrupted

[8] One further reason for assuming that these relational elements can never be 'squeezed out' by the continuum of points is the following: The mathematicians are insistent in warning us that there are never any *next* points, either in the continuum or anywhere else. Any pair of points not next one another constitutes the terms of a line or distance. Therefore the *non-nextness* that holds of every point-pair on the continuum implies that everywhere on that continuum there are distance-relations which are as numerous and as omnipresent as the points themselves.

and unitary *slide*. The one aspect is as real and as essential as the other, and the whole analysis of motion exhibits it as a continuous series of occupancies in the from-to relation.

We are now in a position to give an answer to Zeno's puzzling question, which will satisfy, it seems to me, the claims of conceptual analysis, and also of perceptual experience.

Question: "If a body at each instant of the time of its motion is in one and only one position in space, when can it move *from* one position *to* another?"

Answer: "The body can move from one position to another when one instant *succeeds* to another."

Should someone object that the times when instants succeed one another must be instants and that, therefore, at such times the body would have to be busy, holding down its positions rather than moving from one position to another, I could only reply, in view of the analysis already given, that the time when one instant succeeds another is a perfectly real time, though it is not itself any instant, just as the 'space where' one point is beside another is a perfectly real space, though it is not itself any point. No more is a relation between two brothers itself a brother (not even an infinitesimally small brother), though it is as real a constituent of the brotherhood as are the brothers related. Common sense recognizes that time is made up both of instants that succeed one another and of the succeeding of those instants, and consequently, it finds no difficulty in admitting that, though a moving body is at each instant in some one place, it is also throughout the whole time changing from one place to another. Our solution claims to have justified this common-sense view of motion from the standpoint of logical analysis.

To sum up our account of the six ways of solving the antinomy: The first way, that of the skeptic, would have us accept the unknowable as our only solvent. The second

way, the ultra-rationalism of Kant and Zeno, would have us abandon the testimony of experience and treat motion, and the whole sensible world, as unreal, because it appears to conflict with logic. The third solution, the ultra-empiricism of Bergson and James, would have us abandon the validity of logic because of its conflict with the reality of experience. The fourth solution, which we named the 'relational' theory, would have us deny the conceptual validity of points and instants on the ground that they are not perceived apart from the relations of besideness and succession. The fifth solution, the 'punctiform' or 'cinema' theory of Mr. Russell, would have us deny the perceptual reality of the from-to aspect of motion, and would bid us conceive of it as only a series of occupancies of points of space in instants of time. In our sixth solution, by showing that logical analysis not only permits, but demands that the punctiform elements of the continua of space and time be supplemented by the irreducible relational constituents of 'besideness' and 'succession', we have avoided the paradox of regarding the motions of nature as the illusions of a cosmic cinema, and yet have retained the invaluable conception of motion as a one-one correlation of spatial and temporal elements.

In conclusion, should the reader feel equally dissatisfied with the punctiform and the relational theories, and at the same time regard my 'double-aspect' compromise as merely a verbal and question-begging reconciliation of irreconcilable characters, let him still not feel compelled to revert to one of the three extreme methods of solving the antinomy, which were examined in the early part of our paper. Let him rather seek for himself some as yet undiscovered solution; for such solution there somewhere surely is; and the hope of finding it should not be abandoned until time ends. A world in which so many things are known through both reason and sense can not itself be either unknowable, unreasonable, or nonsensical.

W. P. MONTAGUE

OLD PROBLEMS WITH NEW FACES IN RECENT LOGIC

Superficially considered, the history of logic has been a series of revivals of the spirit of Aristotle, each revival struggling against a steady pressure towards an abstract verbalism that had invariably taken renewed possession of logic in the intervals. Bacon, for instance, was nearer to Aristotle than he was to the thing he criticized and called Aristotle. But there have been, also, deeper tendencies at work in the history of logic, tendencies less apparent. Of these, the tendencies to which we shall especially here refer we shall call, for want of better names and hence with the proviso that they be understood only in the sense later to be defined, the biological and the mechanist. And it is peculiarly desirable, just now, that the scope of these two tendencies be clearly revealed, because in recent discussions representatives of the biological tendency have repeatedly identified the opposing tendency with that abstract verbalism above mentioned, to the complete confusion of the issue.

As the biological logician sees it, logic is a set of devices to aid one in thinking, and thinking is a way of getting along in the world. There are no fixed forms nor classes; there are only lines of division made by us, as being convenient for the moment, and giving place to others when other purposes arise. Forms are but the instruments of present or the vestiges of past behavior; the living process itself overflows every mold and category. These logicians proclaim their logic to be a new logic, though they sometimes trace their lineage back as far as Darwin. It is an honor Darwin scarce deserves; instead, this doctrine is but the development of something that was inherent in Aristotle.

Aristotle was, of course, not an evolutionist, since he was a believer in fixed species. But this has been insisted upon until we have forgotten that Aristotle was something more. Aristotle was a biologist by training and temperament. He was much less mechanistically minded than, for instance, Darwin. Aristotle comes nearer to using such categories as purpose and instrument than does Darwin. What we have called the biological point of view must not be directly identified with the evolutionary. Greek thought was more biologically centered than is ours. Indeed, in Aristotle's day, what we have called the mechanist tendency was scarcely born. Even in Democritus only one phase of it is present; another more important phase, the notion of scientific law, only glimmers for a moment in Archimedes or in Heraclitus. The mechanist tendency deserves the adjective 'new', for it belongs to modern rather than to Greek science, excepting possibly Greek astronomy.

Aristotle's logical treatises proper were not a complete formulation of the methods of science. It is a commonplace that they were instruments for a particular purpose, namely, to direct discussions; they told you how to convince the other fellow. They were forensic handbooks. They assume that there are points on which disputants can agree, certain axiomatic truths. And they tell how, moving out from such starting-points, one can 'mediate' conviction, carry it over from these axioms to other truths less obvious. Their aim is not discovery, but persuasion.

Many questions of a later day probably scarcely troubled Aristotle. That there were axioms seemed to him axiomatic. His aim was social conveyance of certitude rather than a search for hidden truth. If he told the form which an ideal science should take, it was not so much the investigator's ideal, as it was the ideal of a completed science, set out in a form clear and fit for use in the expository textbook. If he raised questions as to difficulties of language,

they were specific difficulties, verbal fallacies, rather than the great general question whether language ever can describe things as they are. And so he adopted the subject-predicate form just as he found it in current speech; and seemed to recognize in the first-figure syllogism, not merely a type of inference, but a correspondence with the causal structure of things. Though not averse to mentioning tricks of dispute, his aim was a formulation of methods of serious discussion. Hence it was, incidentally, not without its connections with what he took to be the nature of things. But, after all, his aim was practical. And we, to whom so much that he did has become a matter of course, can scarcely appreciate the ability with which that aim was carried out. He had no predecessor. Two thousand years of successors added scarcely anything. Like Euclid's geometry, it was one of the great achievements of the human mind.

But apart from the special contents of the logical treatises themselves, there was in Aristotle, and in much of Greek science, a special way of considering the world, which was bound to influence logic. It was the teleological way, and it drew its examples from living things, and from the work of the artisan and builder. It was not modern teleology, with its ideals and consciously planned purposes. It was simply postulating in things themselves a blind effort to be normal. The effort never quite succeeded; it was met by a resistance of the material employed. Yet it was the nature of all things to seek their own natures. Generation after generation, the trees of the forest grew as if guided by a conscious plan, though of such consciousness there was none; they were seeking by their own nature to realize the perfect tree, where to be perfect was simply to be what for them it was normal to be. Laws of nature would have meant for the Greeks simply norms towards which nature approximated, but to which nature never attained. It was

a very physical way of looking at things, born of a direct contact with the stubbornness of physical matter, and the imperfect achievements of man's technology, supplemented by observation of striving living things, as blighted by disease and torn by the storm.

Contrast this with modern science. To the Greek, mathematics was, for the most part, a science of the ideal, a calm world apart. But from the very beginning of modern science, the mechanics of Galileo linked mathematics, in all its rigor, directly with the physical world. The laws of physics were to be conceived exact and never broken; the results could be actually verified and measured with unlimited accuracy. This is not a view suggested by direct inspection of nature; it starts in abstractions, and amid mathematical deductions. Such was the new mechanist standpoint. But the astonishing thing was that this mechanist view, when tried out empirically on nature, actually succeeded. The investigator found, beneath the surface show of approximate uniformities and flowing outlines, a rigidity of laws, such that, the more carefully they were verified by trial, the more rigorous they revealed themselves. Nor did this result fail us in biology, as has sometimes been too hastily asserted, save in the sense that inquiries were there more difficult and slow. Measurements were everywhere multiplied and instruments of precision made more delicate; and with every advance, the laws were found to hold. Or if a law seemed to break down, there arose at once another, and even finer and stricter law, to explain the discrepancy. Hence there came strength to this conception of nature as subject to absolutely rigorous and mathematically definable laws, the mechanist conception of nature. It succeeded. But its foundation was in the utmost abstractions of mathematics, and not in that concrete world where the Greek watched and pondered on the labors of the potter and the smith.

Let us now consider the influence of these views of nature upon the history of logic. Aristotle was considered by the medieval nominalists as their spiritual parent. Outwardly this was a mistake, for Aristotle was not a nominalist. But Aristotle, or rather Greek science and philosophy in general, was responsible for nominalism. Not, indeed, Greek mathematics, with its eternal verities, that led one away from the world. It must be remembered, however, that though we now praise Greek mathematics and scorn Greek physics and biology, the average Greek more likely thought the latter more truly an account of nature than anything in his mathematics. It was the biological teleological standpoint, as above explained, dominating Greek science, which was responsible for nominalism. This was because, once one moved, however little, from the position of Plato, for whom the norms were more real than those things which, for a moment, vainly strove towards them, one was moving in the direction of considering the norms as merely ideal, merely limits never realized. Carry this out with any resoluteness, and nominalism must result. For what we then have is a world of ill-defined individuals with only approximate resemblances; outlines are more or less indefinite; language, aside possibly from mere proper names, will not stand for anything actually realized, since words indicate concepts, standards, and these are mere ideal limits, never more than roughly exemplified in the half-differentiated vagueness of the given world. What things have in common is thus scarcely more than a name; uniqueness is everywhere, particularity is the only real.

But if we should then begin to inquire what is the use of language with its meanings at all, if it stands for nothing real, but only for a vanishing limit of the real, we should probably have only one sort of answer available. That answer would be that it was convenient to group things in classes under common names, even though they were really

severally unique. It saved fatigue; it was economical; in short, it was biologically useful. And the same arguments would hold as to the reason for logical forms and all standards whatsoever, including the notion of a separate thing. They fit the world only as the curved rocker of the rocking-chair fits the floor. What could be granted as given was a continuum, with emphases perhaps, a primordial 'mush'. We have standardized this general world for the same reason that we standardize hats and shoes—because it saves trouble. Thus it is that nominalism and biological, instrumental, pragmatic logic are fundamentally akin.

That the logicians of this school occupy a defensible position, we shall not deny. But it is not altogether satisfying. Perhaps the trouble is that a strict nominalism is nowadays scarcely ever defended in detail. It is rather assumed as evident, as it is, for instance, in Mr. F. C. S. Schiller's work, entitled *Formal Logic*. Some critic or other has cruelly called that work a "sympathetic appreciation of all known forms of fallacy," but really Mr. Schiller is quite rigorously drawing out the formally valid consequences of nominalism. But the main thesis is never defended, which is unfortunate. A good modern defense of nominalism, or of that form of nominalism which says that what words mean is completely created in creating the words, would be welcome, but we do not find it anywhere. The chief semblance of an argument ordinarily urged is an appeal to a certain principle, called 'Occam's razor', or the 'principle of parsimony'. This is unsatisfying as a proof. Not only is there no very good reason to believe that this principle is valid, but it can be interpreted as favorable, now to the nominalist and now to the anti-nominalist, somewhat at will. Let us call the anti-nominalist a 'realist', in the old sense of the term, though not here implying any special beliefs as to a Platonic world apart, but only a belief in common threads of identity running through things. Let us now consider a

case. The realist says, "Here are four red cherries; they have an element in common—their color." The nominalist replies, "No, by the principle of parsimony let us eliminate this element in common, and have simply the four cherries, all similar to one another. This similarity is an ultimate datum, not reducible to a partial identity." Whether he considers the cherries as distinct entities, or as mere emphases in a continuum, is indifferent to the point we wish now to make, which is as follows, for let us now note that the nominalist will not have one identical similarity repeated in the several cases, else we relapse into realism. The similarity of the first and second cherry will be one similarity, and of the first and third another. Thus we shall have six similarities. But these six similarities will not have an element in common. No, they will be merely similar. So there are fifteen similarities among similarities. And these fifteen similarities will be merely similar—but enough to show whither the principle of parsimony might lead the nominalist. There seems no escape, except to say that these similarities are not objective realities, but are creations of the mind. The mind creates only as many as it sees fit. But, after all, the mind feels itself bound to say the similarity of cherries in color is not that of the cherry and the plum. Perhaps the things are wholly mental, but this is pure idealism. A drift of nominalist arguments towards idealism can, indeed, be observed. But if this mode of escape is not accepted, one must grant in things a basis for our predication of similarity. Yet what that basis can be, is puzzling. If it be something they have in common, we return to realism; if only a similarity, the whole difficulty recurs; if neither, it seems a mystery how it can be a basis for similarity at all. We shall not urge that this argument is conclusive. We shall merely venture to say this: that the principle of parsimony really proves nothing, and is never appealed to, as a metaphysical principle, ex-



cept as the ostensible reason for some foregone conclusion, a conclusion really founded on totally different grounds. For scarcely ever do we have parsimony in one direction which is not counterbalanced by superfluity in another. So some better defense of nominalism is *needed*, and not yet forthcoming.

Again let us consider the realist-nominalist issue, but now from a totally different standpoint. If one is a mechanist, in the sense above explained, he believes there are laws of nature which hold absolutely. But such laws, be they of mechanics or of thermodynamics or of any such science, are abstract and only conceptually expressible. Indeed, the fact referred to by any universal proposition contains something which is only conceptually expressible, for there is an element in it which is essentially negative, and this element can not really be reached, as Aristotle long ago pointed out, by any enumeration of individuals, however complete, since it says, "There are no more," and no present individual will tell you that. If there is any way of arriving at the truth of universal propositions, other than merely postulating them true and blindly hoping for the best, it must, therefore, be through the nature of the concepts they contain, and of the actual existence of universal elements of which these concepts are the thought. But the mechanist does suppose he arrives at actual laws of nature, absolutely rigorous, universal, and objective, and yet abstract. His standpoint is, therefore, fundamentally one with that of the anti-nominalist realist, though with more emphasis on abstract invariant characters among relations, and less on the sharing of identical qualities among things, than characterized the older realism.

If now we ask ourselves which of the two has apparently been more pragmatically successful, the pragmatic nominalist or the mechanist realist theory, we shall have to answer in favor of the latter. And the reason is this: If we think

of nature as only approaching towards precision, we shall rest satisfied with rough measurements. We could not reasonably even postulate precision, and we should be perplexed if it appeared. We might believe in the experimental method, as we all do; but we should be leaving out the factor which could do most towards making that method a success. Not so, if we think, on the contrary, of the world of nature as subject to rigorous laws, such laws as, for instance, that of the conservation of energy, laws holding everywhere with strictest exactitude. For now a discrepancy in measurements will not be attributed to the crudity of nature, but to our own ignorance of the specific real law or laws. Methodologically, it is this belief that the natural world does actually illustrate a rigor which makes the most mathematically precise laws the most adequately true, which has, as a matter of fact, won many of the greatest triumphs of modern science. It has led to the revision of old laws and the discovery of new; it has brought planets and chemical elements within our ken. And it is highly improbable that this methodological success could have come about without its having some metaphysical basis in the nature of things. A mere methodological postulate that one should seek for exact laws may lead one to seek for them, but it will not account for one's finding them. And so pragmatically this in some sense anti-pragmatic theory has won a success which its pragmatist competitor can not rival.

To obviate a possible misunderstanding, let us go upon what might seem a digression. In talking of the mechanist point of view, we have been using the term with a difference of meaning from what current usage refers to as the mechanical view of nature. This is because the latter is not one thesis, but several. The mechanical view of nature is taken to mean, first, that physical nature is subject to precise laws. This we accept. And, secondly, it says that modern

mechanics, physics, chemistry, have formulated some examples of such laws. We do not deny it. But, thirdly, it is maintained, and this is the most emphasized thesis of the ordinary mechanical view, that, subject, of course, to future internal revisions within these sciences themselves, mechanics, physics, and chemistry give us *all* the laws there are, the complete set of laws to which not merely the inorganic physical world, but living organisms as well, are subject. This third thesis we do not include in our use of the expression "mechanist point of view." It may be true, but we deny it is a necessary corollary of the first two points.

The distinction just made merits further comment, so frequently is it overlooked. Able scientists and philosophers have again and again argued from evidence which indicates that the laws of physics and chemistry hold strictly of living bodies to the conclusion that these laws are sufficient to account for all the behavior of living things. Yet this is obviously arguing beside the point. For instance, they argue that the law of the conservation of energy prevents, as they say, any other influence than that dealt with in physical science from affecting vital phenomena. Yet it is a mere matter of logical analysis to reach the counter-conclusion, that the law of conservation predetermines only so much about natural phenomena as *can be deduced from it;* and you can not deduce even the second law of thermodynamics, let alone all physical and vital occurrences, from the conservation law. The point which we are making, namely, that showing a law holds rigorously is a totally different thing, and requires different evidence, from proving that the law is a complete and sufficient account, is one of such importance that we may be pardoned for giving also a mathematical example. If we have a set of numbers divided into groups of, for instance, three—the groups, 013,-124, 235, 346, 450, 561, 602, let us say—we might state a

set of postulates such that only that set of numbers would fulfil the requirements, or such that any set of entities fulfilling the postulates would in no wise differ in mathematical structure from this set of numbers. Our set of postulates would then be closed; any other postulate not introducing a new concept would either be deducible from or contradict the original postulates. But now let us consider these same groups of three, but put in an order, the smallest number between the other two, or the largest between. To specify this order would require more postulates. Yet all the original postulates would still be fulfilled. There are the same groups of three, only there is more to be said about them. And so, also, to go outside the pure mathematical realm, if we suppose the numbers stamped on disks, large or small or variously colored. More postulates would again be needed to specify the total result, though the original postulates are still satisfied by one aspect of this totality. So a system of postulates, or a system of laws, can be, in one sense, closed and complete, and yet in another sense, there be *always* the *possibility* of adding new postulates. Just so it is with the physical and chemical laws of nature. It may be that they hold rigorously of living beings; but of itself that does not exclude the *possibility* that there may be other laws also which living things obey. Hence, to say that there is some complete set of laws holding rigorously of living things and completely determining their behavior, is one thesis. To add, also, that the laws of physics and chemistry are laws which hold rigorously of living beings, is another thesis. But both together are not equivalent to the thesis generally called mechanism, namely, that the laws of physics and chemistry are not merely included among the complete set, but constitute the entirety of that set. So we maintain that no one is called upon to grant this third thesis merely because he grants the first. Nor is there any logical reason why the complete set of laws in

one field should not be only part of the complete set in another. So we would again call attention to the fact that the mechanist point of view, as we contrast it with the biological point of view, while intended to include the first thesis, does not necessarily demand the third.

So far, we have considered the nominalist biological attitude and the contrasted realist mechanist interpretation of the world, and we have traced a kinship between Aristotle's scientific position and the modern sort of biological logic. But whether the mechanist interpretation has given birth to any logic of its own, we have not yet inquired. Such a logic would naturally be mathematical in essence. Also, since rigid forms are supposed actually illustrated in things, this logic would be a metaphysical theory about the most general structure of things, rather than a set of rules for the functioning of instrumental thought. But this is almost a definition of that logic variously called symbolic logic, or mathematical logic, or the logic of order, or structural logic, or relational logic. Those who have developed that logic have, from Boole to Peano, shown themselves not fully conscious of the larger bearings of their task. This was natural, and was owing to the array of purely technical problems which immediately demanded attention. That logic even yet is nowhere near a finished product, though its achievements in analysis of the foundations of mathematics have been remarkable. Nevertheless, let us try to evaluate it, even though, in this, prophecy may be needed to supplement history.

Philosophers are apt to pass judgment on it from observing some of its representatives. It is, therefore, accused of responsibility for so-called 'logical atomism' in philosophy, that theory which says the world in space and time is a collection of timeless qualities thrown together in various kaleidoscopic combinations. But surely this is not a new philosophy; even Anaxagoras held something like it. And

a logic which was anti-nominalist and relational we should expect to be, for that very reason, all the more anti-atomistic. And as a matter of fact, to take one example, this logic has tended to thrust into the background those categories of thing and quality made so prominent in Aristotelian subject-predicate logic. Yet those 'simples' which we hear about from believers in logical atomism are merely the old discrete thing-units in smaller edition; the tiny colored spot is not really simple, but has its attributes of extension, brightness, and the like. These 'simples' of logical atomism are not new products of a new logic; they are vestiges of an old. One can believe in relational logic and nevertheless refrain from believing the world is made of 'simples'. Or, to take another example, we find logical atomism making a time-order out of timeless entities. And despite some disclaimers, there has been a tendency therewith to disparage the temporal. But surely the time-relations constitute time itself, and if one thinks of them as lacking in actuality and 'body', mere threads on which more solid atomic pearls are strung, that is his fault, and not the necessary fault of a truly relational logic. A parallel error in understanding that logic itself is the curious prejudice that the marks on paper are the symbols of symbolic logic, which are then manipulated by various rules for putting them together. And we are told that if this game is to be worth while, these marks ought to stand for something. Whereas, as a matter of fact, the rules of manipulation and the ways in which the supposed symbols are put together, are themselves the symbols. It is these relational entities which ought to stand for something; whether anything else does, is no great matter. In short, a relational logic must maintain that relations are real and relations relate, and one can get an accentuation of atomism out of it only by perverting its obvious intent.

It has been believed by some that the work of Frege shows that the ultimate outcome of this mathematical logic will be atomistic and nominalistic. For has not Frege shown us a way to eliminate 'metaphysical lumber', in the shape of realistic entities such as numbers? It is true he has; but notice what he has substituted. The old 'Platonic idea' notion of the number two could not even reveal why two plus two should equal four; since if there be only one such number and it be added to itself, it is not thereby increased. Add to one cat the same identical cat over again, and you do not get two cats. So Frege set out to construct numbers that would have the necessary properties. But he made them out of entities still more abstract. And in doing it he introduced something more, namely, a *unique combination* of these entities. So the number two has not been explained away, but instead of an atom it has become a relational complex, and a unique complex, so that its individuality still survives. Frege then shows that if the elements have certain properties, then this complex has certain properties. This is spoken of as deducing the properties of number from the theorems of pure logic. But Frege did not deduce numbers; he constructed them and then deduced some properties. The word 'constructed' does not here refer to some mental element introduced by Frege, but simply indicates that he had to find a combination possessed of distinctive features not present in the isolated components. So Frege's result is not nominalistic and still less is it atomistic, but is the calling to our attention of new relational complexes, abstract, yet unique.

But there is a serious limitation to mathematical logic as actually developed, which limitation has given some apparent standing to logical atomism. The logic has been worked out with more of an immediate interest in its application than of emphasis on its own merits as a science of ultimate forms; and just this instrumental side has led to

an atomistic result. Frequently only the barest outline necessary for deduction is considered, and other phases have not merely been abstracted from, but even denied. "Smith hates Jones," we find quoted as an example of a simple relation, though surely this is made up of ten thousand thoughts and a thousand acts. For the relations which may be observed, which are, as it were, broad and many-qualitied bands, we find substituted tenuous threads; or even single qualities common to many relations, like transitivity, are considered to the exclusion of the relations themselves. There is no harm in this, if we remember what we are doing, that we are considering only abstracted aspects, not even though the relations are ignored altogether and we consider only the couples and groups of things related. But when we find this suddenly asserted to be a complete account, that this logic as thus developed contains all of system there is in any system, that chemistry is merely this logic with oxygen and hydrogen replacing the x and y, then we need not be surprised if a false atomism results.

A typical case of such forgetting that an abstraction has been made is the treatment of implication. The definition of implication currently used, "either the first proposition is false or the second true," makes of implication not a relation, but a sort of general and abstract quality which members of a certain group of relations holding between complexes possess. Whether relations between complexes differ fundamentally from relations between things we need not here discuss. But it is from some specific relation of this sort that we do, in concrete inferences, arrive at the above-mentioned implication quality by a prior inference, or abstraction, and only subsequently are we able to use the quality in making the deduction we want. More precisely, this sort of implication is one aspect of a relation which might exist between two propositions when the facts they stood for were related by some more specific relation. But



the quality in question is unfortunately defined so wide that it could cover cases where the facts were not related at all. If a deduction is based on such an implication, which is so abstract in form that any two true propositions imply one another—and this is the result of the current theory—then we ought to be able to infer any true proposition from any other. But this is not because they are connected and relevant; no, it is just because there is no connection needed whatever, and therefore any true premise will do. Yet surely we do appeal to *relevance* in any concrete problem, we do go back from this sort of implication to what it is based on. This implication is not "all of system there is in any system." And no wonder that, starting from such presuppositions, namely, that this is a complete account of all that is system in the world, the theory has failed lamentably to explain induction, while philosophically it has ended in atomism.

Perhaps it will be said that our criticism here confuses what these logicians call 'material' and 'formal' implications. No, their 'formal' implication is precisely as atomistic as their 'material' implication. Perhaps we can illustrate the situation in this way. Let us consider a world made up of various properties (qualities and relations) attached to various things. And let us suppose these properties distributed at random. It is extremely improbable that in such random distribution it should come about that a property A was found always along with a property B. It might, nevertheless, occasionally happen. But in the actual world as we find it, this happening is, as a matter of fact, so frequent that it seems incredible the correlation should be due to chance and not to some deeper kinship. In the mere process, however, of deducing that A will be found along with B in a particular case, all that is needful to know is that A always accompanies B—and this is essentially what a so-called 'formal implication' tells you—but

it is not necessary to discriminate whether this is an empirical chance coincidence or whether there is a deeper reason. Mere chance collocation would be quite sufficient for making a deduction, granted that we know the truth of the universal proposition, and deduction always takes the premises as given. How we could establish such a universal proposition does not concern it. Thus the mere deductive instrument has seemed to require nothing more intimate in relational structure than would be found even in kaleidoscopic chance combinations of atomistic properties. And thus he who thinks that an account of its use as a deductive instrument is all of logic there need be, and that all that is valid in induction is deductive, may very naturally come to rest with a conclusion in harmony with atomism. So emphasis on 'formal' implication brings us once more to the same consequences of current theories.

But it seems at least reasonable to maintain that there is more of system in the world than atomism allows us to admit; that there are systems *and* systems, and systems superposed on other systems. For instance, physics may be a system built upon a mathematical system, so that what is true in mathematics is true in physics, but still there is something more in physics than in mathematics, a more not merely in entities introduced, but a relational and systematic more. The laws of what we may then call a 'lower science' will then probably be rigorously valid and necessary for, but not sufficient completely to determine, the systematic structure of a 'higher science'. And such a theory preserves for us all the precision of the 'exact' sciences unsuperseded by, or in, any higher science. Though in the higher a lower science may appear as an 'abstract part', this does not bar the lower from being self-subsistent elsewhere. A similar point we have discussed previously, relative to the laws of physics and biology. Relational logic would then appear as the 'lowest' of such sciences. Some

such general theory would seem more plausible than 'logical atomism' has as yet shown itself to be.

Certain idealistic logicians also talk of systems, but with a difference. They revive the Greek concept of perfection, and their interpretation of whole and part makes *all* parts abstract and relative differentiations from out the underlying total. Hence there is a denial of any sharp lines, which shows a kinship with the previously discussed biological attitude in logic; and hence also a denial that a 'lower' system can ever be self-subsistent, from which necessarily follows the truth of absolute idealism. That these theses are inconsistent with any known sort of relational logic, and clearly belong to the biological tendency, could probably be shown. We shall not, however, consider those points further here, but shall return, for a last word, to the instrumental logicians.

That the instrumental logic has given us some able statements of how thought actually goes to work on a problem, must surely be granted; but that, therefore, its nominalistic bias is thereby proved sound, can not be granted so easily. Nor have such logicians established their right calmly to identify universal forms with signs and symbols, and thus reduce them, along with the symbols, to factors in, or vestiges of, our activities. Why does thought come out right about things, if they themselves have no structure? Mr. F. H. Bradley, in his *Principles of Logic* has tried out a semi-nominalist view: it might, perhaps, be called 'conceptualism', since it identifies universals with 'ideas', that is, with specifications somehow imposed by thinking upon a given continuum, which only more or less tolerates them. But the hopelessly skeptical result of thus even partly separating so-called 'ideal' content and real being, is a warning that that road is one where dangers lurk. One can scarce put aside a suspicion that some of our pragmatic nominalists escape similar skepticism largely by refusing to

think issues out; a refusal which they sometimes call euphemistically a 'keeping to the concrete case.' To say simply that thought of a certain sort succeeds, is not enough. As Husserl has said, "The philosopher is not satisfied with success, he wants to know why he succeeds." Whether a relational logic, a logic of things and not of thoughts, can incidentally throw light on why thought succeeds, remains to be seen. But, meanwhile, let us be patient with relational logic, for, though unfinished, it is in progress. And let us not condemn it on the ground that some of its present votaries cherish also, in addition, some idiosyncrasies of opinion that may seem to us perversities or creeds outworn.

H. T. COSTELLO

END



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